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AZ CORP COMMISSION DOCUMENT CONTROL

FENNEMORE CRAIG A Professional Corporation Jay L. Shapiro (No. 014650) 3003 North Central Avenue Suite 2600 Phoenix, Arizona 85012 Telephone (602) 916-5000

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Attorneys for Johnson Utilities Company

#### BEFORE THE ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE APPLICATION OF JOHNSON UTILITIES COMPANY FOR AN EXTENSION OF ITS EXISTING CERTIFICATE OF CONVENIENCE AND NECESSITY FOR WATER SERVICE.

DOCKET NO. WS-02987A-05- 00 38

APPLICATION FOR EXTENSION OF CERTIFICATE OF CONVENIENCE AND NECESSITY

Johnson Utilities Company, L.L.C. ("Applicant"), an Arizona public service corporation, hereby applies for an Order approving an extension of its existing Certificate of Convenience and Necessity ("CC&N") for water and wastewater service to include an area encompassing the development known as Quail Run ("the Development"). In support of this Application, Applicant states as follows:

- 1. Applicant is a public service corporation engaged in providing water and wastewater utility service, respectively, for public purposes within portions of Pinal County, Arizona. Applicant was first granted a CC&N in Decision No. 60223 (May 27, 1997), and currently serves approximately 8500 water and wastewater utility customers. The area served by Applicant contains both residential and commercial properties.
- 2. Standard Pacific of Arizona, Inc. ("Standard Pacific") has requested that Applicant extend water and wastewater utility service to the Development, located in Section 24, Township 3 South, Range 8 East in Pinal County, Arizona. A copy of this request for service is attached hereto as Exhibit 1.
- 3. The area covered by this Application is roughly 100 acres, and will contain approximately 351 residential lots. The Development is to be constructed in phases, and Standard

Pacific estimates that home construction and sales will commence in the second half of 2005.

- 4. A legal description for the area covered by this Application is attached hereto as Exhibit 2.
- 5. Applicant's management contact is Brian Tompsett of Johnson Utilities Company, whose business address is 5230 East Shea Boulevard, Suite 200, Scottsdale, Arizona 85254. The telephone number is (480) 998-3300.
- 6. Applicant's operator, certified by the Arizona Department of Environmental Quality, is Tom Moulton, whose business address is 968 E. Hunt Hwy, Queen Creek, Arizona. The telephone number is (480) 987-9870.
- 7. Applicant's attorneys are Fennemore Craig, whose address is 3003 North Central Avenue, Suite 2600, Phoenix, Arizona 85012-2913. The individual attorney responsible for this application is Jay L. Shapiro. Mr. Shapiro's telephone number is (602) 916-5366. All Data Requests or other Requests for Information should be directed to Mr. Brian Tompsett, with a copy to Mr. Shapiro's attention, on behalf of Johnson Utilities Company.
- 8. A Certificate of Good Standing for Johnson Utilities Company is attached hereto as Exhibit 3.
- 9. The newly acquired customers in the area covered by the application will receive water service subject to Applicant's current rates and charges for utility service, which were approved in Decision No. 60223 (May 27, 1997).
- 10. A detailed map indicating portions of Applicant's present CC&N and the area requested for extension by this Application is attached hereto as Exhibit 4.
- 11. Applicant's balance sheet and profit and loss information for the 12-month period ending 2003 is attached hereto as Exhibit 5.
- 12. A copy of the master water design report and master wastewater design report for the Development is attached hereto as Exhibit 6.

A copy of Applicant's most recent Annual Report (2003) is attached hereto as 13. 1 2 Exhibit 7. The estimated numbers or customers to be served in each of the first five years of 14. 3 water utility service to the area covered by this Application are as follows: 4 Residential 5 6 1st Year: 151 2<sup>nd</sup> Year: 351 7 3<sup>rd</sup> Year: 351 4<sup>th</sup> Year: 351 8 5<sup>th</sup> Year: 351 9 Applicant's estimated annual operating revenue and operating expenses for each of 15. 10 the first five years of operation in the new area covered by this Application are as follows: 11 12 WATER 13 Operating Expenses Operating Revenue 14 1<sup>st</sup> Year - \$45,199 2<sup>nd</sup> Year - \$114,380 1<sup>st</sup> Year - \$48,169 2<sup>nd</sup> Year - \$150,706 15 3<sup>rd</sup> Year - \$150,698 4<sup>th</sup> Year - \$152,424 5<sup>th</sup> Year - \$153,057 3<sup>rd</sup> Year - \$206,388 4<sup>th</sup> Year - \$206,388 5<sup>th</sup> Year - \$206,388 16 17 18 WASTEWATER 19 Operating Expenses 20 Operating Revenue 1<sup>st</sup> Year - \$38,083 2<sup>nd</sup> Year - \$126,605 1st Year - \$28,854 21 2<sup>nd</sup> Year - \$60,795 3<sup>rd</sup> Year - \$177,046 4<sup>th</sup> Year - \$177,046 5<sup>th</sup> Year - \$177,046 3<sup>rd</sup> Year - \$76,840 22 4<sup>th</sup> Year - \$78,361 5<sup>th</sup> Year - \$78,938 23

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16.

years are as follows:

The plant cost projections, including service meters, by year for the next five (5)

#### **Plant Cost Projection**

	Water	Wastewater
1 <sup>st</sup> Year -	\$789,484	\$769,175
2 <sup>nd</sup> Year -	\$789,484	\$769,175
3 <sup>rd</sup> Year -	\$789,484	\$769,175
4th Year -	\$789,484	\$769,175
5 <sup>th</sup> Year -	\$789,484	\$769,175

- 17. The water and wastewater facilities needed to serve the area covered by this Application will be constructed as needed to provide service to customers.
- 18. The construction of the additional utility facilities needed to serve the area covered by this Application will be financed primarily by advances in aid of construction and hook-up fees in accordance with Commission regulations and Applicant's applicable tariffs, as well as pursuant to the terms of any main extension agreement between Applicant and Standard Pacific. A copy of a fully executed main extension agreement for water facilities between the parties shall be filed with the Commission in support of this Application when completed.
- 19. The Development is located within the boundaries of Applicant's present Pinal County franchise.
- 20. Arizona Department of Environmental Quality ("ADEQ") Approvals to Construct the facilities to serve the requested extension area will be provided to the Commission as soon as they are received by Applicant.
- 21. Notice of this Application will be given by publication in a newspaper of general circulation as required by the Commission. Proof of publication will be filed with the Commission.
- 22. Applicant maintains that this Application is in the public interest and should be granted. There is a present need for water and wastewater service in order to foster orderly growth in Pinal County, as evidenced by the developer's requests that Applicant extend such

utility service. Furthermore, Applicant is the largest water and wastewater utility provider in the area. Therefore, in addition to the advantages of an increased regionalized customer base, granting this Application will allow customers in the area to receive water and wastewater utility service from one provider. Furthermore, granting this Application will allow the Applicant and its customers to benefit from economies of scale in administration and planning, as well as benefits related to billing and collection, that are present when water and wastewater is provided by a single entity.

23. To the best of its knowledge and belief, Applicant is currently in compliance with all regulatory requirements applicable to its provision of water and wastewater utility service in Arizona, including all applicable orders, rules and regulations of the Commission and ADEQ.

WHEREFORE, Applicant respectfully requests the following:

- A. That the Commission proceed to consider and act upon this Application as timely as possible and to schedule a hearing, if necessary, on this matter;
- B. That upon completion of said hearing that the Commission enter an Order approving the extension of Johnson Utilities Company's current Certificate of Convenience and Necessities to include the additional geographic areas requested by this Application as described in Exhibit 2, and illustrated in Exhibit 4; and
- C. That the Commission grant such other and further relief as may be appropriate under the circumstances herein.

DATED this day of February, 2005.

FENNEMORE CRAIG, P.C.

By:

y L. Shapiro

Atorneys for Johnson Utilities Company

1	ORIGINAL and 13 copies delivered this day of January, 2005, to:
2	Docket Control
3	Arizona Corporation Commission
4	1200 West Washington Street Phoenix, Arizona 85007
5	COPY hand-delivered this day of February, 2005:
6	Jim Fisher, Executive Consultant Utilities Division
7	Arizona Corporation Commission
8	1200 West Washington Street Phoenix, Arizona 85007
9	10000
10	By 1625 65 4/51239.011
11	1023(03)1/31233.011
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# **EXHIBIT 1**

# REQUESTS FOR SERVICE



**December 22 2004** 

#### **VIA HAND DELIVERY**

Brian P. Tompsett Johnson Utilities 5230 East Shea Blvd. Suite 200 Scottsdale, AZ 85254

Re: Quail Run

Dear Brian:

As we have previously discussed, Standard Pacific is purchasing approximately 100 acres known as Quail Run located at the southeast corner of Quail Run Road and Bella Vista Road in Pinal County, Arizona. Standard Pacific anticipates that we will build 351 dwelling units on that acreage. As we also discussed, we are interested in Johnson Utilities serving the property with both water and wastewater services.

It is our understanding that Johnson Utilities will need to expand their CC&N to include this property which is located in Section 24, Township 3 South, Range 8 East.

In connection with that proposed expansion, enclosed are the following for your use:

- 1. Legal description of Quail Run. As indicated above, the gross acreage is approximately 100 acres.
- 2. Master Water Report for Quail Run prepared by Evolution Engineering L.L.C. dated December 21, 2004.
- 3. Master Wastewater Report for Quail Run prepared by Evolution Engineering L.L.C. dated December 21, 2004.
- 4. Engineer's cost estimate for the on-site infrastructure. All infrastructure will be installed in Year 1.
- 5. We estimate that the number of cumulative customers for each year will be as follows:

Brian Tompsett December 22, 2004 Page Two

Year 1	-O÷
Year 2	150
Year 3	351
Year 4	351
Year 5	351

Please proceed as soon as possible with the necessary paperwork to extend Johnson Utilities' service area to include Quail Run. Standard Pacific is scheduled to close on the acquisition in February, 2005 and would anticipate beginning construction of the infrastructure at that time.

Singerely,

Garol Grumley

vice President Land Acquisition

**Enclosures** 

cc: Patrick Black (via hand delivery)

# **EXHIBIT 2**

# LEGAL DESCRIPTIONS

#### EXHIBIT "A"

A PARCEL OF LAND BEING SITUATE IN THE WEST HALF OF THE WEST HALF OF SECTION 24, TOWNSHIP 3 SOUTH, RANGE 8 EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, PINAL COUNTY, ARIZONA, HAVING A BOUNDARY MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING FOR A TIE AT THE ARIZONA HIGHWAY DEPARTMENT BRASS CAP MARKING THE NORTHWEST CORNER OF SAID SECTION 24, FROM WHICH THE ARIZONA HIGHWAY DEPARTMENT BRASS CAP MARKING THE WEST QUARTER SECTION CORNER OF SAID SECTION 24 BEARS SOUTH 0 DEGREES 18 MINUTES 56 SECONDS EAST, 2652.01 FEET DISTANT;

THENCE NORTH 89 DEGREES 58 MINUTES 50 SECONDS EAST, 1351.43 FEET TO THE WEST 1/16 CORNER OF SAID SECTION 24;

THENCE SOUTH 0 DEGREES 16 MINUTES 45 SECONDS EAST, 40.00 FEET TO THE TRUE POINT OF BEGINNING;

THENCE CONTINUING SOUTH 0 DEGREES 16 MINUTES 45 SECONDS EAST, 2611.66 FEET TO A POINT ON THE EAST-WEST MID-SECTION LINE OF SECTION 24;

THENCE SOUTH 0 DEGREES 26 MINUTES 44 SECONDS EAST, 713.09 FEET TO THE SOUTHEAST CORNER OF SUBJECT PARCEL;

THENCE SOUTH 89 DEGREES 57 MINUTES 58 SECONDS WEST, 1307.23 FEET TO THE SOUTHWEST CORNER OF SUBJECT PARCEL, SAID POINT BEING ON THE EASTERLY RIGHT-OF-WAY LINE OF QUAIL RUN ROAD;

THENCE NORTH 0 DEGREES 38 MINUTES 54 SECONDS WEST, 713.11 FEET TO A POINT ON THE EAST-WEST MID-SECTION LINE, SECTION 24 AND FROM WHICH POINT THE WEST QUARTER SECTION CORNER OF SECTION 24 BEARS SOUTH 89 DEGREES 57 MINUTES 58 SECONDS WEST, 40.00 FEET;

THENCE NORTH 0 DEGREES 18 MINUTES 56 SECONDS WEST, ALONG THE EASTERLY RIGHT-OF-WAY LINE OF QUAIL RUN ROAD 2612.00 FEET;

THENCE NORTH 89 DEGREES 58 MINUTES 50 SECONDS EAST, 1311.40 FEET TO THE TRUE POINT OF BEGINNING.

### **EXHIBIT 3**

# CERTIFICATION OF GOOD STANDING





### Office of the CORPORATION COMMISSION

#### CERTIFICATE OF GOOD STANDING

To all to whom these presents shall come, greeting:

I, Brian C. McNeil, Executive Secretary of the Arizona Corporation Commission, do hereby certify that

\*\*\*JOHNSON UTILITIES, L.L.C. \*\*\*

a domestic limited liability company organized under the laws of the State of Arizona, did organize on the 5th day of June 1997.

I further certify that according to the records of the Arizona Corporation Commission, as of the date set forth hereunder, the said limited liability company is not administratively dissolved for failure to comply with the provisions of A.R.S. section 29-601 et seq., the Arizona Limited Liability Company Act; and that the said limited liability company has not filed Articles of Termination as of the date of this certificate.

This certificate relates only to the legal existence of the above named entity as of the date issued. This certificate is not to be construed as an endorsement, recommendation, or notice of approval of the entity's condition or business activities and practices.



IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of the Arizona Corporation Commission. Done at Phoenix, the Capital, this 1st Day of December, 2004, A. D.

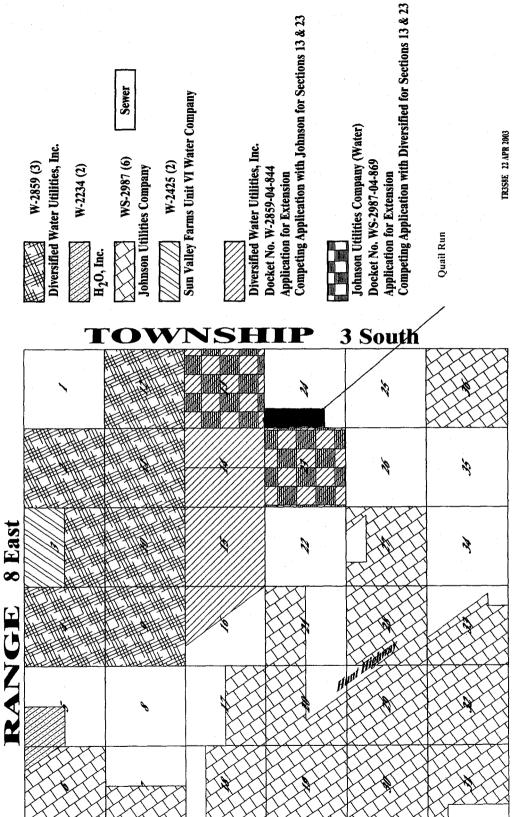
Executive Secretary

By Mine Afractes

# **EXHIBIT 4**

MAP

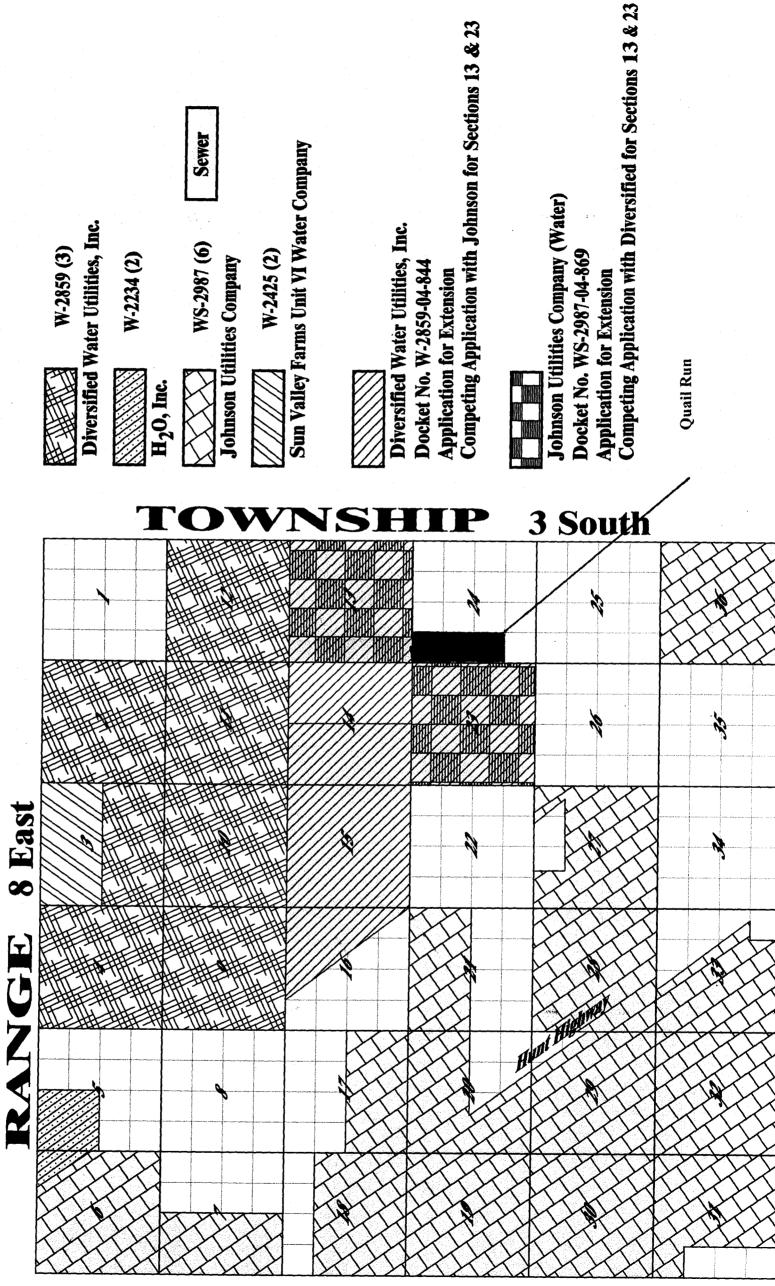
# COUNTY Final



Sewer

TR3S8E 22.APR 2003

# Pinal



Sewer

WS-2987 (6)

W-2234 (2)

W-2425 (2)

W-2859 (3)

### **EXHIBIT 5**

# BALANCE SHEET AND STATEMENT OF INCOME

#### Johnson Utilities, LLC. Statement of Income December 31, 2003

Operating Revenue				-		•
Water Sales		•	• -		-	3,919,316
Sewer Fees	•		-			1,237,464
Other Revenue						101;1 <del>70</del>
Total Revenue	• •	•			\$	5,257,950
		• • •				
•			•	·		
Operating Expenses	-	•	٠		•	000 000
Purchased Water				• .	\$.	222,808
Purchased Power		•	•			291,396
Repairs & Maintenance		•	•			12,099
Outside Services				•		1,203,322
Water Testing				•		52,163
Rents			•	•		117,648
Transportation			•			557
Insurance						28,964
Sludge Removal						2,685 41,641
Miscellaneous Operating	g Expense	•	••			
Depreciation and Amort	ization					419,049
Taxes Other Than Incor	ne		•			2,089
Property Taxes	_				٠.	71,731
Total Operating	Expenses		**		⇒.	2,466,152
			•		e.	2,791,798
Net Operating I	<u>rcome</u>		•		Ψ.	2,191,180
						. •
				_		
Other Income (Expenses)					\$	18,662
Interest Income			•		Φ	(79,211)
Interest Expense		2		• . •	e	(60,549)
Total Other Inc	ome (Expense	<u>s).</u>	• • • • • •		. 🍄	(60,043)
	•			•	•	2,731,249
Net Income		•			4	2,101,245

#### Johnson Utilities, LLC. Balance Sheet December 31, 2003

#### **ASSETS**

Utility Plant		
Plant in Service	\$	40,382,861
Less: Accumulated Depreciation	· . —	(2,046,608)
Net Utility Plant in Service	\$·	38,336,253
Construction Work in Progress		<del>-6,899;861</del>
Net Utility Plant	\$	45,236,114
Current Assets		
Cash	\$	684,314
Accounts Receivable		1,476,030
Other Receivables	٠٠.	38,000
Total Current Assets	\$	2,198,344
		. •
Other Assets .	•	
Deferred Legal Fees	. \$	553,533
Land Held For Investment	•	70,257
Deposit		12,670
Total Other Assets	\$	636,460
<u>Total Assets</u>	\$	48,070,918
MEMBER'S CAPITAL & LIABILITIES		
		E 447 670
Member's Capital	\$_	5,447,979
	•	00.440.000
Contributions in Aid of Construction	. \$_	20,149,882
	•	. 007 000
Long-Term Debt		807,000
	٠.	
Current Liabilities	_	400 004
Accounts Payable	\$	423,801
Current Portion of Advances in Aid of Construction		138,000
Due to Member	•	715,823
Customer Deposits		45,940
Accrued Taxes		175,974
Accrued Interest		7,040
Total Current Liabilities	\$_	1,506,578
		•
Deferred Liabilities	-	
Advances in Aid of Construction, Less Current Portion	• \$	20,159,479
Total Member's Capital & Liabilities	\$	·48,070,918
	:	

See Accountants' Compliation Report

## **EXHIBIT 6**

# MASTER WATER & WASTEWATER DESIGN REPORTS

#### RECEIVED

DEC 2 1 2004

LAND ACQUISITION

# MASTER WASTEWATER REPORT FOR QUAIL RUN

December 21, 2004

Prepared for:

Danto Real Estate Investments, Inc.

2250 E Beachcomber Dr. Gilbert, AZ 85234

Prepared by:

Evolution Engineering L.L.C. 1731 E. Orangewood Avenue Phoenix, AZ 85020 (602) 944-1144



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#### 6.11 POTENTIAL MAINTENANCE EQUIPMENT

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FIGURE 1: VICINITY MAP

#### **APPENDICES**

APPENDIX A: PROPOSED GRAVITY SEWER COLLECTION SYSTEM LAYOUT FOR QUAIL RUN

APPENDIX B: GRAVITY SEWER COLLECTION SYSTEM SPREADSHEET

APPENDIX C: TOTAL DYNAMIC HEAD (TDH) CALCULATIONS & PUMP CURVE DATA

APPENDIX D: LIFT STATION DETAILS

#### 1.0 EXECUTIVE SUMMARY

This report describes the sewer collection system requirements for Quail Run, a single family residential development located in Pinal County. The Intent of this report is to present a design and hydraulic analysis of the required sewer collection system. The system design criteria were obtained from the Johnson Utilities Company Design Guide and Standard Details as published by Johnson Utilities Company, the sewer provider for this development.

The proposed onsite gravity sewer collection system will consist of eight inch sewer lines throughout the Quail Run development. The sewage collection system described in this report considers a liftstation being installed in the Quail Run development, a force main being installed between the Quail Run liftstation and the existing Sonoran Villages development liftstation located at the Northwest corner of the intersection of Felix and Judd Road. The existing Sonoran Villages liftstation and force main were designed by Can-Am Engineering and is currently under construction as of the date of this report.

The Sonoran Villages development consists of 1,600 dwelling units but Can-Am Engineering sized the liftstation and force main associated with this project to allow for a variance. 2,000 dwelling units were used in the design of the liftstation and the sewer force main that would serve the Sonoran Villages development. The force main, designed by Can-Am Engineering and is currently under construction, will convey wastewater from the Sonoran Villages development to the Wastewater Treatment Plant (ADEQ file numbers 980215 for Phase I and 980174 for Phase II) located in a portion of the Northwest Quarter of

Section 11, Township 4 South, Range 8 East. This is located North of Hunt Highway and West of the Union Pacific Railroad.

The anticipated timing of Quail Run is such that the liftstation and force main facilities at the Sonoran Villages development will have been constructed and online prior to Quail Run project connecting to the system. It is anticipated that the Quail Run development will develop in one phase.

#### 2.0 INTRODUCTION

Quall Run is an approximate 100 acre single family residential development with a total of 351 lots located in Pinal County. The site is bounded on the North by Bella Vista Road and Quall Run Road on the West. More specifically, the site is located in a portion of West Half of the West Half of Section 24, Township 3 South, Range 8 East, of the Gila and Salt River Base and Meridian, Pinal County, Arizona. See Figure 1 below for vicinity Map.

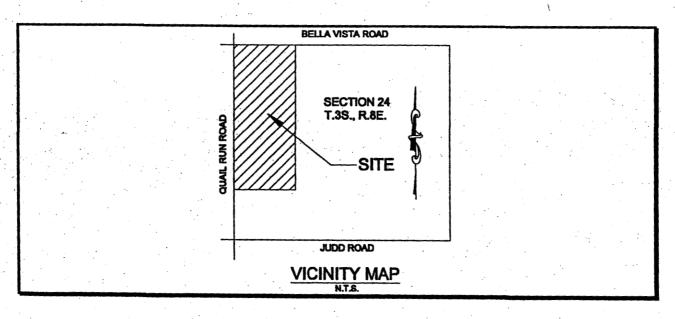


Figure 1: Vicinity Map

The site is presently undeveloped. The topographic conditions for the site contain desert terrain. The terrain generally slopes to the West. Currently this site lays outside the service area boundaries for Johnson Utilities. However, Johnson Utilities has agreed to provide sewer service to the site and is currently seeking to expand their certificated area.

The purpose of this report is to analyze and present the design of the wastewater collection system for the Quail Run project. This report recommends line sizes, locations and capacity of the proposed sewer mains for the site as well as presents the design requirements for a liftstation facility, force main and other appurtenances associated with the development of Quail Run.

#### 3.0 DESIGN CRITERIA

#### 3.1 WASTEWATER FLOWS

The design criteria used in this wastewater analysis are based on Johnson Utilities Company Design guide and Standard Details. The following is a summary of the key design criteria utilized in this report. This summary only highlights some of the key design considerations used to analyze this wastewater collection system, lift station & force main and does not in any way supercede any of the requirements as set forth by Johnson Utilities Company nor Arizona Department of Environmental Quality (ADEQ).

- 1. 90 GPCD for all residential areas requiring sewers (ADWF).
- 2. 2.6 persons/D.U. for all Family Community Residences.
- 3. 250 GPAD for wet weather flow infiltration and inflow.
- 2.42 peak dry weather flow factor for a 913 population per Table 1 of the Johnson Utilities Company Design Guide and Standard Details Manual.

#### 3.2 GRAVITY SEWER COLLECTION SYSTEM

- 1). Sewer lines shall be a minimum of 8-inch with a minimum of 4 feet of cover.
- 2). Manholes required whenever a change in sewer alignment, grade or size occurs.
- 3). Manhole inverts with 0 to 5 degrees deflection shall be constructed at the grade of the sewer line; deflections or intersections of 5.1 to 45 degrees shall drop 0.1 feet across manhole, and deflections of 45.1 to 90 degrees shall have a minimum 0.2 feet of drop across the manhole.
- 4). Maximum allowable manhole spacing is 500 feet for sewer lines less than 18-inches in diameter.
- 5). Sewer lines with invert depths greater than 12 feet or pipe size larger than 12-inches require 5 foot diameter manholes with a 30inch diameter cover. All others require a 4 foot diameter manholes with a 24-inch diameter cover.

Note: The minimum pipe slopes for this project have been increased 15 percent over that of the ADEQ requirements for constructability measures.

Pipe Diameter

8

Adjusted Minimum Pipe Slope 0.0038

#### 3.3 LIFT STATION & FORCE MAIN

- Johnson utilities requires all lift stations to be constructed with grit chambers separate from wet wells.
- All grit chambers and wet wells shall have saueriesen or sewer shield 101S applied to the inside surface.
- 3). Force mains shall be designed to maintain a minmum flow velocity of 3 feet per second and a maximum flow velocity of 7 feet per second.

- 4). Minimum wet well volume in gallons shall be ¼ of the product of the minimum pump cycle time, in minutes, and the total pump capacity, in gallons per minute.
- 5). Ensure that wet well colume does not allow the sewage retention time to exceed 30 minutes unless the sewage is aerated, chemicals are added to prevent or eliminate hydrogen sulfide formation, or adequate ventilation is provided.
- 6). Equip each wet well with at least two pumps. Pumps that are capable of passing a 2.5-inch sphere or are grinder pumps.

#### 4.0 FLOW ANALYSIS

#### 4.1 Gravity Sewer Collection System

The Manning Equation was used to determe the proposed pipe sizes for the on-site gravity sewer collection system. A roughness coefficient of 0.013 (for PVC), and a minimum velocity of 2.0 ft/s were used to determine the pipe capacity. The calculated flows and minimum pipe sizes for gravity sewer collection system are tabulated in the spreadsheet located in Appendix B.

#### 4.2 Liftstation & Force Main Flow Rate Data

Number of Dwelling Units

D.U. = 351 homes

#### Estimated Wastewater Flow Rate Data

- 90 gallon per person per day
- 2.6 persons per single-family dwelling unit
- 2.42 peak dry weather flow factor for 913 population (From Table 1 of Johnson Utilities Co. Design Guide & Standard Detail)
- 250 gallons per acre per day for wet weather storm water infiltration

#### Average Dry Weather Flow Rate (ADWF)

#### Peak Dry Weather Flow Rate (PDWF)

#### Peak Wet Weather Flow Rate (PWWF)

#### 4.3 Summary of Flow Analysis

The enclosed proposed sewer layout shows the proposed gravity sewer collection system with pipe sizes, approximate manhole locations, and proposed Liftstation location (Appendix A). Actual locations, inverts, and sizes will be determined with the final design of the sewer. Sewer will be adjusted to avoid conflicts with other utilities and to conform to the site and hydrologic conditions.

#### 5.0 LIFT STATION

#### 5.1 GRIT CHAMBER

Wastewater influent to the pump station will first drop into a five foot (5') diameter chamber where heavy objects are allowed to settle to the bottom of the chamber and floating objects are screened, prior to the raw wastewater entering the pumps' wet well. The settled and screened object can be removed from the chamber, washed down at the washpad, and then transported to an approved dump site. Wash-down water at the wash-down pad will drain back to the grit chamber. The grit chamber's roof will have an easy access cover for maintenance for the removal of trapped debries and objects.

#### 5.2 DUPLEX PUMPS' WET WELL

The wet well will be an eight foot (8') diameter chamber providing a wastewater storage volume of 780 gallons before pump activation. After development produces the lift station's design flow at build out of approximately 351 dwelling units, the storage volume represents approximately 5 minutes of peak wet weather flow (design PWWF=156 gpm). The wet well will have a pump hoist and guide rail system for raising and lowering of the pumps. The volume of wastewater in the wet well will be detected by electric liquid level sensors. The bottom of the wet well will be sloped towards the pumps' vortex. The roof of the wet well will contain a discharge piping for the pumps as well as the submersible pumps. Appendix 'D' shows the design for the wet well.

#### 5.3 DUPLEX PUMPS

A duplex pump system is proposed in order to maintain pumping capacity in the event that one pump falls as well as meet the peak wet weather flow rate demands (PWWF = 156 gpm) 60 horsepower, 3 phase, 460 volt, 3450 RPM, centrifugal, 4" non-clog, 3" solids handling, submersible, wastewater pumps capable of pumping 156 gallons per minute against a TDH of 247.54 feet. Refer to Appendix 'C'The pumps are to be equipped with quick disconnect fittings for easy removal from the wet well.

#### 5.4 CONTROL PANEL

The control panel will control pump activation/deactivation. The control logic will be as follows.

- 1. Activate lead pump on rising water level. Elev. = 1518.90
- 2. Activate lag pump on rising water level. Elev. = 1519.50
- 3. Activate flashing alarm light on rising water level. Elev. = 1519.75.
- 4. Deactivated pumps on falling water level. Elev. = 1518.48

The control panel is to be fiberglass NEMA 4X UL listed double door enclosure. The panel is provided total automatic control, as well as individual manual on/off control. The panel is to have flashing alarm light, individual pump run-time meters, power monitor, full voltage non-reversing motor starters, a space heater, and a lighting suppressor. Intrinsically sage relays are to be provided for circuits of all water level sensors in order to prevent spark form occurring at any of the circuits.

The control panel is to be mounted on an electric panel board rack that will also have mounted: and electric source meter, a 460 to 120 volt transformer, 120 volt single breaker box with a main power supply shut off, junction box, a panel board light, light switches, a remote force main

flow rater meter read out, a 12 volt batter charger, a 12 bolt battery to start the back-up generator motor and any other electrical components necessary for a complete/functional duplex pump panel board. The electric panel board rack will have a tilted roof to provide some shade and some rain protection, as well as to provide support for overhead lights.

#### 5.5 VALVE VAULT

Dual discharge piping from the pumps and the wet well will converge in a valve vault. Each pumps' discharge pipe will be equipped with a back flow preventing check valve and an isolation gate valve before, converging into the 4" force main. In the event of a spill within the valve vault, the floor of the vault will have a grate and a drain pipe leading back to the wet well. The roof of the valve vault will have an easy access covers for installation and maintenance access. The redundant pipe and isolation valve will be installed in order to have flexibility in flushing the pipe system, returning pumped fluids to the wet well, or pumping through some other pipe than the 4" force main.

#### 5.6 WASH-DOWN PAD

A 4-inch water tap shall be installed at the site with a Siamese hose connection or fire hydrant required at the end of the water tap. Debris and objects that are retrieved from the routine maintenance of the grit chamber can be rinsed off at the wash-down pad then stored in 50 gallon container until ready for transport to an approved disposal site. The wash-down pad will have a grate feeding a discharge pipe that drains back to the grit chamber. The wash-down pad may also be used by maintenance staff to rinse off the pumps prior to working on them, or washing their hands after coming into contact with wastewater.

#### 5.7 MAGNETIC FLOW METER

An inline magnetic flow meter, within a vault, is proposed for the force main. The meter will have a remote readout mounted on the electric panel board rack.

#### 5.8 AIR/VACUUM RELEASE

A combination air release and air/vacuum release valve and vault is proposed immediately after the valve vault in order to help protect the force main from blockage due to trapped air and collapse due to a vacuum occurring in the force main.

#### 5.9 BACK-UP GENERATOR

The proposed pump station will have an on-site back-up generator with an automatic transfer switch. If the generator is not installed initially with construction of the liftstation, the generator should be installed no later than the occupancy of the  $43^{rd}$  dwelling unit in accordance with A.A.C. R18-9-E301.D.5.g. The Back-up generator is to automatically activate via power transfer switching, in the event that normal utility power to the site is disrupted. The Back-up generator is to be capable of operating both pumps and all other electrical components at the site in two stages. A twelve volt (12V) direct current (DC) battery will be connected to the system in order to start the generator upon utility power failure. A battery charger will maintain the battery's charge. Once the utility power is back to normal, power to the pumps and other loads will automatically switch from generator to utility. The pumps' control panel flashing alarm light is to be activated when utility power is disrupted.

#### 6.0 INITIAL OPERATIONS & MAINTENANCE MANUAL

This Initial Operations and Maintenance Manual should only be considered as a guide for developing a Final Operations and Maintenance manual once the pump station and force main are constructed and become operational. The content of the Initial Operations and Maintenance Manual consists of subject matter recommended by A.A.C.R18-9-E301.F.

#### 6.1 STATION LAYOUT & FLOW PATTERNS

- A). Wastewater from Quall Run enters the pump station site through an 8-inch gravity sewer collection system. The wastewater from the gravity sewer collection system will connect to a grit chamber, the pump stations first structure.
- B). The grit chamber is a five foot diameter underground chamber that extends 5 feet below the incoming gravity sewer pipe. Heavy debries and objects in the wastewater will fall to the bottom of the chamber and be trapped there. Large light debris and objects floating will also be trapped in the chamber by a screen that is covering the outlet pipe that leaves the grit chamber. The pipe leaving the grit chamber is at the same elevation below ground as the pipe entering the grit chamber. The pipe leaving the grit chamber from the pipe entering. The purpose of the grit chamber is mainly to protect the pumps by removing debris and objects that could harm the pumps.
- C). Wastewater leaves the grit chamber and flows to wet well that contains the pumps through a connecting underground gravity flow pipe. This pipe is sloped downward towards the wet well so that the wastewater can flow via the force gravity.
- D). The screened wastewater then enters the wet well containing the pumps. This is the pump station's second structure. The wet well is an eight foot diameter underground chamber that extends 2.77 feet below the inlet pipe. The wet well has two submersible pumps mounted to the floor on the chamber. When the water level in the chamber rises to a certain point. One of the pumps will automatically turn on and begin pumping the wastewater.
- E). the operations of the pumps is controlled by switches in the electrical boxes at an above ground control panel board. The

control panel board also has a flashing warning light in the event the wastewater in the wet well reaches a level indicating pumping problems. The control panel board also has an overhead light for night work, and electrical outlets for plugging in equipment. The panel board is also where main electric power is to be shut off.

- F). The wastewater is next pumped through an 4-inch iron pressure pipe to a valve vault. Each pump has its own 4-inch iron pipe that goes from the pump in the wet well to the valve vault.
- The valve vault is the third underground structure at the site. The G). valve vault is seven foot diameter (round) chamber that extends approximately five feet below the ground surface. The two 4-inch pipes, coming from the two pumps, enter the vault where valves are placed on the pressure pipes. Each 4-inch pipe has a check valve and a gate valve installed on it. The check valves prevent the wastewater from flowing in the wrong direction towards the pumps, which could damage the pumps. The gate valves are to turn flow off completely, from or towards the pumps. The gate valves isolate the pumps so that a pump can be removed for repair or maintenance. The two 4-inch pressure pipes are then both connected to where the force main begins. The valve vault piping has a pipe connection and gate valve for external use. This could be used to pump wastewater to a truck for disposal elsewhere, in the event that the force main was un-operational. It could also be used to recycle water to the wet well during pump testing.
- H). The valve vault also has a four inch plastic drain pipe in the floor of the vault. The drain pipe is connected back to the pumps' wet well. The purpose of the drain pipe is to return any wastewater to the wet well that is spilled in the valve vault, when valves are being replaced thus eliminating the possibility of an external spill.
- inch force main to another underground chamber that contains a combination air release and air/vacuum release valve. The chamber is a three foot diameter (round) vault with a concrete floor that has a two inch drain hole. Potential wastewater spills that may occur in the vault will percolate down in the ground through the hole. The air/vacuum release valve has two functions. It allows for air that is trapped in the force main to be released. Trapped air can reduce the amount of wastewater flow that can go through the force main. It also prevents a vacuum from occurring

in the force main. A vacuum in the force main could collapse the pipe. A vacuum can occur when wastewater flows out of one end of the pipe without having any wastewater or air flowing into the other end of the pipe.

- J). The wastewater then flows in the 4-inch force main to the last underground structure at the site. This structure is also a three foot diameter (round) vault with a gravel bottom. This vault contains a wastewater flow meter. The flow meter is an electromagnetic flow meter that has a digital read out located on the control panel board.
- K). The pump station site has a potable water spigot for use in washing down equipment and motors prior to maintenance work or, washing down trapped debris/objects before transporting the debris/object to an approved disposal site. The water from this spigot is safe for human consumption and may be used for washing dirty hands or for washing out a person's eye in the event of an accident. The water may also be used to initially test the pump system.
- I). The site has a concrete wash down pad that acts as a controlled area for washing down equipment, motors or, debris/objects. The pad has a four inch drain pipe, connecting the pad to the wet well. This pipe allows wash water to be drained to the wet well, then pumped away with the wastewater.
- M). The site will have a back-up electricity generator. The back-up generator is needed in the event that the normal electricity supply is lost.
- N). After the wastewater's flow rate is measured, the wastewater will flow through the 4-inch force main to the grit chamber of the liftstation located at the intersection of Judd Road and Felix Road. The force main will be buried four to five feet below ground. A force main identifying/locating tape will also be buried in the same trench with the pipe at/or about 18 inches below the surface. The 4-inch force main is switched from Iron pressure pipe to plastic pressure pipe before leaving the Quail Run pump station site.

#### 6.2 UTILITIES

The site will have potable water, electricity and natural gas. The electricity will be three phase high voltage (460) for operating the pumps. Transformers are used to further step down the voltage for all other equipment. Natural gas can be used to run the back-up generator.

Natural gas can be shut off completely at the gas meter.

Electric power can be shut off completely at the control panel board.

Water can be shut off completely at the water meter.

#### 6.3 OPERATIONS & CONTROL PROCEDURES

The pump station is fully-automatic self-operating facility, requiring periodic operation and control by the station's operator. The station's operator is to make routine inspections of the operations and controls and perform the following:

- A). Check grit chamber for amount of debris/objects trapped. Remove debris/objects from water surface, outlet pipe screen, and chamber bottom as warranted by operating efficiency. Rinse off removed debris/objects at the wash down pad. Store rinsed debris/objects in sealable 50 gallon drums. Record date and type of debris/objects trapped (at least once per emptying). Record any noticeable abnormal odors coming from the wastewater.
  Record any noticeable abnormal color in the wastewater.
- B). Check electric control panel board for any noticeable damage. Test flashing alarm light by engaging test button. Test yard light by turning switch to 'on' position. When pump is operating, record the flow rate. Check running time meter for each pump to assure equal run time has occurred. Check pumps' on/off/auto switches for correct positioning (auto). Check space heater for proper operation.
- C). Check wet well for any noticeable damage. Check water level sensor for correct height and for tangles in wires. Check piping for noticeable leaks.

- D). Check valve vault for any noticeable damage and leaks in the piping. Check that the pumps discharge pipe gate valves are in the fully open position.
- E). Check air/vacuum release valve vault for any noticeable damage and leaks in the plping.
- F). Check flow meter vault for any noticeable damage and leaks in the piping.
- G). Check water Siamese hose connection for proper flow and pressure. Make sure water is turned off after use.
- H). Check wash-down pad grate for blockage. Run water through grate and check for proper drainage of pad. Transport debris/objects collected from grit chamber to approved disposal site once storage containers are full. To reduce odors, rinse off debris/objects daily, until transported to disposal site.

#### 6.4 SAFETY PROCEDURES

#### A). Public Health & Safety

Wastewater pump stations must be treated with caution and respect from a public health and safety standpoint. The possibility of contamination or infection from pathogenic organisms does exist when one comes in contact with wastewater. Breathing in of wastewater fumes can also be toxic, especially in unventilated areas.

The fence around the pump station must be maintained to discourage unauthorized people from entering site.

Wastewater spill need to be presented as best as possible through proper operations and maintenance.

Unavoidable spills need to be contained on-site and cleaned up as fast as possible in order to minimize any risk to public health and safety, as well as to protect the environment. Containment can be achieved by constructing an earthen berm, or erecting a sandbag wall, around the site.

## B). Personal Hygiene

- 1). Never eat lunch or put anything into the mouth without first washing and disinfecting hands with antibacterial soap.
- Keep hands away from face when working on pumps or other parts of the operation where hands may have become contaminated.
- Don't wear work coveralls or rubber boots in the car or at home.
- 4). Always clean any equipment such as safety belts, harness, and face masks, gloves, ect. after use.
- 5). Keep fingernalls cut short and clean as they are excellent carriers of dirt and germs.

### C). Safety

- 1.) Remove and replace heavy manhole/chamber covers carefully and only with the proper tools.
- 2). Descend into any manhole/chamber cautiously to guard against defective steps or rungs.
- Only enter well ventilated manholes/chambers. See part regarding noxious gases that bay be found in sewers.
- Maintain a high level of good housekeeping. This involves keeping floors, walls and equipment free from dirt, grease and debris. Keep tool properly stored when not in use.
- 5). Keep concrete surface clean and free from slippery substances, such as olis.
- 6.) Be especially cautious when working with an electrical distribution system and related facilities. Never work on electrical equipment and wire with wet hands or when clothes and shoes are wet. Always wear appropriate safety gloves for electrical work. Never use a switch box for anything other than a switch box.
- Keep all personnel safety conscious by reminding them of specific safety instructions. Such instructions should include information on how to contact the nearest medical center and fire station, rescue techniques, resusitation and first aid techniques.
- 8). Never work alone around the manholes/chambers because of the danger of drowning and other accidents.
- Refrain from smoking while working in manholes or other areas where gases can be trapped.
- Sufficient fire extinguishers (Underwriter's Laboratories approved) should be placed in readily accessible locations.

- 11) Treat all cuts, skin abrasions and similar injuries promptly. When working with wastewater, the smallest cut or scratch is potentially dangerous and should be cleaned and treated immediately with a 2 percent solution of tincture of iodine.
- 12). See a doctor for all injuries.
- 13.) Provide first aid training for all personnel.
- 14.) Be inoculated for waterborne diseases, particularly typhoid and paratyphoid fever. Keep a record of all immunizations in an employee health record to assure yourself of receiving up-to-date boosters, ect.
- 15.) In laboratory work, use pipet bulbs rather than the mouth so as not to introduce contamination to the mouth. Don't drink water from laboratory glassware. Paper cups should be provided in laboratories for drinking purposes. Never prepare food in a laboratory.

# E). Noxious Gases, Explosive Mixtures and Oxygen Deficiency

The principal gas hazards associated with wastewater treatments are accumulations of sewer gas and its mixtures with other gases or air which may cause death or injury through explosion or by asphyxiation as a result of oxygen deficiency. The term sewer gas is generally applied to the mixture of gases in sewers and manholes containing high percentages of carbon dioxide, varying amounts of methane, hydrogen, hydrogen-sulfide and low percentages of oxygen. Such mixtures sometimes accumulate in sewers and manholes where organic matter has been deposited and has undergone decomposition. The actual hazards from sewer gas exit in the explosive amount of methane, hydrogen sulfide or oxygen deficiency. Hydrogen sulfide is toxic at vary low concentrations and one's sensitivity to the odor is quickly deadened.

Chlorine gas, which is irritating to the eyes, respiratory tract and other mucous membranes, may settle in low, still areas. The gas forms an acid in the presence of moisture. The gas escapes by leakage from cylinders and feed lines and finds its way to these places.

# F). Safety Equipment

The types of safety equipment which a wastewater facility should have are as follows:

- 1). Detection equipment (for gases and oxygen deficiencies).
- 2). Masks (self-contained air packs for oxygen deficiencies).
- 3). Safety harnesses, lines and hoists.

- 4). Proper protective clothing, gloves, footwear and head gear.
- 5). Ventilating equipment.
- 6). Non-sparking tools.
- 7). Communications equipment.
- 8). Portable air blower.
- 9). Explosion-proof lantern and other safe illumination.
- 10). Warning signs and barriers.
- 11). Emergency first aid kits
- 12). Proper fire extinguishers.
- 13). Eye wash and shower stations in laboratory areas.
- Safety goggles for work in laboratories and other dangerous areas.

### G). Additional Source of Information

New York Manual, Ch. 14 WPCF, MOP No. I, Safety in Wastewater Works Texas Manual, Ch. 35 Sacramento State Home-Study Course, Ch. 12

#### 6.5 MAINTENANCE

# A). Maintenance Tools/ Equipment (to be readily available)

- 1). Extra long garden rake, to clean grit chamber's grate, at discharge pipe to wet well.
- 2). Grappling hook with rope, to fetch floating debris/objects in the grit chamber.
- 3). Extra long ladder, to enter grit chamber and wet well, for special maintenance.
- 4). Portable air blower/fan, to vent grit chamber and wet well, before/during entering.
- 5). Winch or hoist (with necessary appurtenances), to remove pumps.
- 6). Water hose (with nozzle), to wash down equipment and area.
- 7). Telephone, to call for assistance.
- 8). Locks (combination or with keys), to lock access doors to chambers and wet wells.
- 9). Broom and dust pan, to collect small debris/objects at wash down pad.
- 10). 50 gallon drums (with sealable lids), to store and transport collected debris/objects.

11). Safety equipment.

12). Extra light bulbs

#### B). Station's Equipment (General)

Refer to manufacturer's equipment brochures for component equipment maintenance procedures.

### C). Gate Valves:

All valves should be operated periodically to ensure proper operation and prevent "freeze-up". Do not close gate valve on pipe that is in use.

#### D). Grit Chamber:

The grit chamber shall be checked regularly (weekly). The grit level is to be noted. Periodic cleaning (grit removal) will be required to prevent grit buildup and entrance of grit to the wet well. Grit shall not be allowed to accumulate to a level higher than 12 inches below the bottom of the discharge pipe to the wet well. The utility is to contract with a local waste hauler of grit removal, and safe disposal at an approved site.

#### E). Sewage Combination Air Release and Air/Vacuum Valves

Combination air release and air/vacuum valves shall be visually inspected and the exhaust ball valves tested on a regular (monthly) basis to ensure proper operating conditions. If leakage is noted coming from any part of the unit, the unit is to be repaired in accordance with the manufactures' recommendations or replaced.

### F) Elashing Alarm Light:

Test the alarm light daily by pushing the test button on control panel.

# G). Wet well Liquid Level Sensors:

Test all sensors on a regular basis (monthly). Lower or raise each sensor as needed to the existing liquid level and determine if proper reaction from the pumps and the alarm light occurs.

## H). Wet Well Liquid Level Sensors:

Replace any damaged/leaking pipe. Tighten botts or replace leaking fittings. This should be done as soon as a leak is observed.

### D. Electrical Equipment, Switches and Conductors:

Annually, a certified electrician is to inspect/ test all electrical components and wiring. Replace all components and /or wiring that is likely to fall during the next year of service.

#### J). Generator:

See manufacturer's maintenance recommendations in Volume 2.

### 6.6 RECORDS

The pump station's operator and maintenance staff are to keep records of the pump station operations (flow rates, emergencies, utility cost, ect.,) and of the equipment replacements, repairs and maintenance.

#### 6.7 TROUBLE SHOOTING

# A). Equipment Troubleshooting:

The final Operations and Maintenance Manual is to have a section which contains troubleshooting recommendations from each equipment manufacturer that has equipment installed at the pump station site.

## B). Operations Troubleshooting:

# 1. Flashing Alarm Light Activated

The flashing alarm light will be activated when the flow rate of wastewater entering the pump station wet well exceeds the rate of flow that the two pumps can pump out of the wet well. The alarm light will also be activated where there is a power failure. Following are potential causes for the flashing alarm light to be activated.

### a). Pump(s) failure

The alarm signal can mean that one or both pumps might have failed. First check control panel to make sure pumps switches are at the "AUTO" position. Test pumps to see if they are functioning properly. Replace one or both pumps if a pump(s) have actually failed.

## b). Pump(s) RPM to low

If the pumps have variable speed drives, as recommended, the problem can most likely be cured by increasing the rpm of the pumps.

### c). Force Main Blockage

If a blockage occurs in the force main leaving the pump station, flow will be restricted or blocked and wastewater will rise in the wet well activating the flashing alarm light. Test each pump(s) operational status by hooking a hose to the by-pass connection in the valve vault and return pumped wastewater to the wet well. If no flow goes through the by-pass, a force main blockage is most likely. The blockage could be due to trapped air in the line. Check combination air release/air vacuum valve for proper operation. If ok, next flush the force main by pumping clean water at high pressure through the by-pass connection. Remember to close isolation valves to the pumps before flushing operations. If flushing does not clear the blockage, use a sewer rooter or sewer roadrunner to free the obstruction.

### d). Isolation Valve(s) Closed

If a pump's isolation gate valve is closed or partially closed, the flow rate leaving the wet well will be stopped or reduced respectively. Check that valve(s) in valve vault are fully open, except by-pass valve which should be fully closed.

## e). Pump(s) Check Valve Malfunctioning or Clogged

If a pump's check valve collects debris, it can malfunction or become clogged. Once it has been determined that

- 1). the pump(s) are operating properly,
- 2). that the isolation valve is fully open and
- the force main does not have a blockage; then it is time to remove and inspect the check valve(s) and possibly the isolation valve(s). Replace valves if needed.
- f). Wet well Liquid Level sensor(s)/Pump(s) Activation Switch (es) Failed or Hung Up

If a liquid level sensor(s) fails or gets hung up on other equipment in the wet well, the pump(s) might not activate and deactivate as they are suppose to. Remove sensor(s) and check to see that they are working properly.

### a). Control Panel Malfunction

If a pump(s) will not automatically activate and deactivate, the liquid level sensor(s) are working properly, an electrical malfunction in the control panel is most likely. Call a professional electrician to check out the circuitry.

#### 2. Grit Chamber Overflows

If the grit chamber's discharge pipe screen becomes clogged, the grit chamber will fill with wastewater and overflow (spill) to the surrounding area. Immediately clean the screen and grit chamber of all trapped debris.

#### 6.8 EMERGENCY OPERATING PLANS & PROCEDURES

Emergency conditions are situations which pose immediate hazards to (1) personnel; 2) environment or 3) equipment. To ensure that station's operation goes on with minimal disruption, emergency situations must be identified and contingency plans detailing special procedures be

established for alternate methods of operations, emergency repair, first ald, and other emergency responses before such a situation arises.

Once developed, the emergency operation and response program must be annually reviewed and updated. The objectives of emergency response planning are identified as follows:

- To eliminate or minimize adverse effects from emergency situation affecting the pump station.
- 2). To develop procedures for properly responding to emergencies.
- To provide instruction for system personnel to ensure that they understand their responsibilities during emergency situations.
- To provide inventories of available emergency equipment and supplies and outline existing mutual aid agreements/contracts with outside organizations for specialized assistance.

Telephone numbers of persons to contact under different emergency conditions are to be kept in an accessible location.

## A. Causes of Emergencies:

There are five major causes of emergencies.

- 1). Natural Disasters
- 2). Civil Disorders and Strikes
- 3). Faulty Maintenance
- Negligent Operation
- 5). Accidents

#### Natural Disasters

Each individual treatment facility is subject to certain specific disasters. In Pinal County, primary natural threats are floods, tornadoes or windstorms, earthquakes, fire, explosions, and freezing. A response plan for all of these situations should be predetermined. The possible effects of each disaster should be listed along with the immediate precautions to be taken which will either eliminate or counteract each effect. The following list a suggested response procedure for the most commonly suffered effects. This table should be expanded by the operator so

that it provides an up-to-date reference for all plant personnel.

#### a). Eloods

There are two (potentials for flooding: The first potential is from natural causes, such as rainstorms or the overflowing of rivers and washes. The other potential is a pump station operational causes: i.e., when incoming wastewater cannot be contained and pumped to its proper discharge point due to such reasons as piping failure, pipe blockage, pump or equipment failure, power failure, or failure of personnel to exercise proper maintenance or operational practices. Regardless of the cause, flooding is a health and safety hazard for people and environment.

Flooding may occur either inside or outside the facilities. The areas prone to flooding are manholes, chambers, the wet well and any low lying areas of site.

Storm water flooding usually will not pose a health hazard at the pump stations unless the storm water is allowed to enter manholes, the grit chamber and/or the wet well at a rate in excess of the pump station's capacity for pumping capacity, local flooding by sewage contaminated storm water will occur as the manholes, grit chamber and wet well fill up and overflow to the surface runoff waters. Infiltration is minimized by constructing the access points to the manholes, the grit chamber and the wet well at an elevation above the water surface elevation of the flooding storm waters and by keeping the access lids/covers closed.

Flooding caused by the overflow of wastewater due to operational causes will pose people and the environment to all hazards of waterborne diseases and may lead to the production of areas/pockets of toxic and/or explosive gases/vapors, and possibly oxygen deficient areas. Wastewater overflow flooding due to operational causes should be

avoided at all costs through proper operation and maintenance of station.

Any flooding that inundates electrical equipment could cause electric shock hazards and could damage certain electrical components.

In the event of flooding with wastewater involved, health and safety considerations should include the following:

- have provisions in place for a local waste hauler to be available for service in emergencies.
- Notify all appropriate authorities (police, health and fire).
- 3). Do not enter flooded areas alone
- Do not enter flooded areas prior to shutting off electrical current to any submerged electrical lines or equipment that ate not rated for submerged use.
- Do not enter flooded area prior to checking for gas presence and oxygen deficiency.
- Do not enter flooded areas without proper protective clothing and equipment.
- Berm or sand bag the perimeter of the pump station site to contain the contaminated waters.
- 8). Have standby portable wastewater pumps and air blowers/fans available.
- Do not use unprotected lights or other unprotected electrical equipment during clean up procedures.
- Special consideration should be given to the prevention of possible contamination of the potable water supply.
- 11). Perform site cleanup per approved cleanup plan.

The pump station operator is to see that advanced preparations are in place for reacting to a flood with wastewater involved scenario at the site.

#### b). Tornados or Windstorms

Occasionally tornados, windstorms or other wind disturbances can occur in Pinal County. When advanced warning is given, all moveable objects should be secured and all emergency equipment made ready. Power failure and flooding may accompany tornadoes or windstorms and preparations should be made anticipating their occurrence.

Some of the damages which might be considered would include the following; access hatches blown off, possible damage to any exposed equipment, and the accumulation of debris. Especially troublesome may be large amount of debris entering the grit chamber with the influent wastewater flow, causing an abnormal load on the discharge pipe screen.

#### c). Earthquakes

Pinal County does not have a history of damaging earthquakes. However, if one should occur, possible hazards would include power outage, flooding from operational causes. In the case of a severe earthquake, there could be pipe ruptures, structural damage, fires and explosions.

#### d). Eires

The most important factor in the prevention of the majority of fires is practicing a high standard of good housekeeping. The routine removal of paper, flammable dust, oily wastes, ect., will minimize the possibility of fire by removing the source of fuel. Keeping the site free of unwanted vegetation (weeds) is required.

A fire prevention program by and for all employees is to be in place. "No Smoking" signs, posted where applicable, will help to eliminate a source of ignition. Carelessness is the main source of ignition and it is the responsibility of the Utility to instruct employees in the fundamental objectives of fire prevention. These objectives include:

- 1). Good housekeeping practices
- Recognition of potential explosion hazards.
- Careful observance of maintenance procedures such as spray painting, welding, burning and soldering.
- 4). Smoking only in authorized areas.
- 5). Proper operation of equipment and processes.
- 6). Proper preventive maintenance for all electrical and mechanical equipment.
- 7). Do not allow unqualified persons to work in hazardous area.

The majority of industrial fires originate in wiring and electrical equipment. Other causes include smoking, friction, overheating materials, burners, sparks, spontaneous combustion, burning or welding, chemical action, and lightning.

The pump station operator is to develop a fire plan in conjunction with the local fire department. In case of fire; (1) evacuate non-essential personnel, (2) call fire department and (3) try to combat fire with available trained personnel and equipment. Fire extinguishers are to be readily available.

Care must be taken to combat fires with the appropriate equipment, i.e., do not use water on electrical or oil fires, as this will only compound the problem.

#### e). Explosions

Explosions can occur when certain dust gases, explosive liquids or explosive vapors have accumulated and are trapped.

Explosive gases include methane, sewer gas, hydrogen sulfide, ethane, ammonia, natural gas and carbon monoxide. Locations where these gases can accumulate and be trapped are in sewer manholes, sewer pipes, chambers and wet well. Potential for natural gas infiltration into the wastewater collection system does exist and special precautions are to be taken.

Explosive liquids and explosive vapors, incorporates such items as gasoline, cleaning solvents (such as carbon tetrachloride), paints and oils. All of these have explosive vapors associated with them. Hazardous areas would include any enclosed areas such as manholes, chambers or wet well when adequate ventilation is not present. Sources of explosive substance can occur during construction of the pump station or during its maintenance. Another source of these material is created when the local fire department hoses down gasoline spillage (as from overturned vehicles, ect.,) into the sewer system, or accidental spillage from gasoline storage and filling stations. Homes and businesses might also discharge oils, grease, volatile solvents or other materials into the sewer system, which can generate explosive vapors in addition to being combustible in liquid form.

Preventive measures consist of using explosion-proof or intrinsically safe electrical equipment, providing adequate ventilation, removing dust by vacuum cleaning, restricting open flames and smoking, providing good preventive maintenance, using gas detection equipment, and maintaining general good housekeeping.

Explosions, if they occur, may be accompanied by fire, power outage and possible flooding from

operational cause. In the event that gases or other explosive materials are present, shut down all electrical equipment to eliminate the source of ignition until the area can be properly ventilated.

### f). Freezing

The location of the pump station is in an area where freezing rarely occurs for extended periods of time. Therefore, only routine safety measures, which include the removal of snow and ice from areas where people might walk and slip, are necessary when freezing occurs.

### 2. Civil Disorders and Strikes

Civil disorders and strikes present a new type of threat to the nation's water pollution control program. During a time of civil disaster, many situations could occur which would prevent efficient operations of the pump station. An emergency response plan should include steps to be taken to prevent equipment damage and to ensure rapid recovery of full pumping capability. Some of the possible situations that could occur during a strike or civil disorder are destruction of wastewater pumping station, the bombing of a power substation, or the dumping of toxic material into a sewer manhole. When the response plans to disaster situations are organized, emergencies such as the ones listed above should be considered.

# 3. Faulty Maintenance

Faulty maintenance can cause breakdown throughout the system. If the breakdown is a major unit, an emergency situation could exist. Therefore, as part of the emergency response program, a plan should be established to ensure against faulty maintenance; and, if a breakdown does occur, an efficient repair procedure should be organized.

# 4. Negligent Operation

Negligent operation can be a major cause of pump station emergencies. Careful, organized operating procedures must be established in order to protect employees, the surrounding community and the environment. As an extra precaution, it is also wise to set up a system of checks and balances so that one person is never solely responsible for the operation of the pumping station.

#### Accidents

As emphasized throughout this document, safety should be one of the primary concerns of the Utility's staff. The main way to reduce accidents is to observe all safety regulations faithfully. Accidents, when they do occur, result in personal injury, property damage, or environmental pollution. Accidents, more than any other type of emergency, require a quick, logical response. Therefore, it is important to keep lists posted at the EMERGENCY CONTROL CENTER which explain the response actions, in order of importance, for each type of emergency that might result from a personnel, equipment, or natural accident.

### B. Effects of Emergencies

The reason for the pump station and force main is to protect the public's health and the environment by first containing and then pumping wastewater to a point of discharge. When the potential arises that the wastewater will not be contained and /or pumped to a point of discharge, an emergency exists. The potential causes for an emergency can have many effects rift: on the pump station and force main, yet many causes will have the same effect. It is important to remember when preparing an Emergency Operation and Response Program that there is a certain limited number of critical effects that stem from the many causes of emergencies. In order to avoid repetition in a response program, it is more logical to establish a response procedure for each critical effect rather than for each of the many causes. The critical effect then becomes the emergency and can be suspended to no matter what the cause. However, the cause(s) might also require a response in order to eliminate the effect/ermergency. The Emergency Operation and Response program should be simplified by addressing what response(s) to take in order to prevent or minimize the critical effect by carefully analyzing the situation then responding.

Critical effect that should be considered are as follows:

- 1). accidental Injuries
- 2). Communication Loss
- 3). Power Outages
- 4). Pump Station Malfunctions
- 5). Wastewater Spills
- 6). Fires and / or explosions
- 7). Operations and Maintenance Personnel Absence

Each of these critical effects (emergencies) may have several potential causes that need to be analyzed and possibly corrected, in order to prevent a risk to the public's health & safety as well as protect the environment. Some critical effects (emergencies) may be or become the cause for another critical effect (emergency)

### C. Emergency Control Center

Once constructed the operator building at the Johnson Utilities Section 11 WWTP will be the EMERGENCY CONTROL CENTER (ECC). The ECC should contain a mobile telephone, a list of reserve equipment and supplies and their location, standby generator data and emergency response procedures' check list for the most probable emergencies. Special notices or instruction should also be posted at this center.

An atternate emergency control center should also be considered.

### D. Vulnerability Analysis

tt is important that the pump station controls the equipment, which would be the most vulnerable during an emergency, be pinpointed so that the consideration can be given to the alternate or emergency modes of operation available. One way to isolate vulnerable processes and/or equipment is through a "vulnerability analysis". This is done by selecting several high-risk emergency situations and estimating the effects that each of these situations could have on individual components of the pump station. The components that would be out of service during several type emergencies, and are vital to the operations of the system are the most vulnerable system components. The list of vulnerable system components should be compared with the repair priority list. Single out vulnerable components which are high on the repair

priority lists. Special attention should then be given to the maintenance, repair, and emergency operation of these components.

The following measures are considered to reduce component and system vulnerability:

- The formation and execution of the optimum preventive maintenance and equipment testing program.
- Complete familiarization with the alternate modes of system operation that would allow a more vulnerable component to be taken out of service.
- 3). Maintenance if reserve and emergency equipment (both for operations and/or repairs) in good working order along with all the tools and equipment necessary for placing the reserve or emergency equipment into operation.
- 4). Training regular and auxiliary personnel in emergency operations and procedures.
- 5). Conducting emergency operations exercise periodically.

# E. Role of Utility's Personnel in Response Program

Initially, utility personnel should work together to perform a vulnerability analyses for the pump station and to create checklists for the procedures to be followed in all anticipated emergencies. Steps should then be taken to equip the EMERGENCY CONTROL CENTER, stock and inventory reserve supplies and spare parts, and inform all employees of basic emergency procedures. It is important in the beginning that it be clear exactly who will give orders in case of an emergency so that the response program will run as smoothly as possible.

Accurate record keeping is also important to a well organized response program. When an emergency occurs, there should be up-to date plans of the pump station so that repair teams can locate the problem area. Inventory should be restocked as soon as possible so that reserve supplies will be on hand when needed.

Once an emergency response program has been set up, it is important that it be ready to go into action at a moment's notice. Therefore, a schedule should be established which will give certain

prescribed times when reserve equipment will be tested and reserve supplies inventoried.

Utility's employees should be drilled periodically on emergency response procedures. During emergency drills, all personnel should report to their posts and proceed as they would in an actual emergency. Those aspects of the plan that require the cooperation of other organizations should also be reviewed periodically with key personnel from these organizations, particularly after emergency plan updates.

# F. Emergency Early Warning Report

The operators, mechanics and supervisory staff should devise an Emergency Early Warning Report, a system for notification of organizations and agencies who might be affected by an impending emergency or spill. If this report is to be effective in initiating response action it must state, clearly and concisely, the possible emergency, evaluate its possible effects and indicated, if possible, what the disruption to the pump station might be. All possible threats to public health, water system, and other public services should be listed and taken into consideration. The degree of emergency and action needed should be categorized as minor, moderate or major and appropriate response action should be carefully detailed. Copies of the report and instructions for its use should be given to concerned organizations, to involved agencies and to those who are most apt to become aware of possible emergency condition.

# G. Operation and Equipment Failures Procedures

#### General

It is important to remember when developing the response plan for operation and equipment fallures that a priority system must be established. This priority system should be based on vulnerability analysis. In a system, certain units are more easily dispensed with than others. In major breakdowns, where more that one unit fails, it should be very clear as to which units are to be repaired first.

The first step in any emergency is to obtain the essential facts, analyze the specific situation, and determine the most effective course of action.

# 2. Collection System Break or Blockage

A significant reduction of influent could indicate collection system breakdown. Collection system maintenance personnel should be notified immediately. A break or blockage in any of the collection lines leading to the pump station is considered an emergency situation. The following steps should be included in those taken to cope with this situation.

# 3. Pump Station Equipment Failures

- a). Obtain the essential facts, analyze the specific situation, and determine the most effective course of action.
  - 1). Determine if back-up electricity generation is needed.
  - 2). Determine if spill containment is needed.
  - 3). Determine if night lights are needed.
  - 4). Determine if blower/fan is needed for ventilation
  - 5). Determine if electrician is needed.
  - Determine if a by-pass pump and hoses are needed.
  - 7). Determine if fire fighting equipment is needed
  - 8). Determine if traffic control is needed.
  - 9). Determine if special equipment/tools are needed for repair and/or clean-up.
  - 10). Determine what safety equipment is needed for the work crew.
- b) Implement notification measures as required, particularly public agencies and/or parties under mutual aid agreements. Contracts.
  - Notify Police and Fire Department if deemed necessary.
  - 2). Notify Health Department if deemed necessary.
  - 3). Call for electrician if deemed necessary
  - 4). Call waste hauler if deemed necessary
  - 5). Call for work crew.

- 6). Notify Utility's management.
- c) Check spare parts and equipment inventory.
  - 1). Verify spare equipment/parts are in inventory.
  - 2). Verify needed work equipment/tools are readily available and are operational.
  - Call for emergency back-up equipment/tools.
     Parts not in inventory or not operating.
- d). Dispatch a pre-trained, properly equipped work crew
  - 1). Be prepared to cope with current traffic conditions
  - 2). Be prepared to work at night
  - 3). Be prepared to work under hazardous/flooded conditions.
  - 4). Be prepared to provide adequate ventilation in the work area.
  - 5). Be prepared to contain a spill and protect the environment.
  - 6). Be prepared to treat a spill with lime
  - 7). Be prepared for by-pass pumping.
  - 8). Be prepared to unclog blocked pipes
  - 9). Be prepared to fight fire
  - 10). Be prepared to change out failed equipment
  - 11). Be prepared to cope with wastewater backup into homes, and Buildings.
- e). Restore operations to normal as rapidly as possible.
- Always clean up the area as the last procedure.
   Remember, any hazardous waste must be disposed of properly.

If equipment is frequently checked for serviceability and lubricated and maintained according to the manufacturer's recommendations, equipment breakdowns should be infrequent. When a breakdown does occur, the unit should be isolated and by-passed, and if available, the disabled unit should be isolated from the system and repair work completed as soon as possible. The emergency

response plan for each process should address operational procedures which can best maintain process integrity during equipment malfunctions. Reference should be made to manufacturer's service manuals. All personnel should be alert for conditions that could indicate a failure of equipment, such as equipment not operating, abnormal operations, abnormally high or low liquid levels, ect.

### 4. Force Main Break or Blockage

- a). Ruptures are classified as a spill and need to be fixed as soon as possible to protect the public's health and safety and the environment. The spill will need to be contained and the area cleaned up after the pipe has been repaired. Time will be of the essence, since the pump station will be unable to pump during the repair work, and the sewer system feeding the pump station will begin backing up with wastewater, and possibly flood homes & businesses and/or spill out of manhole covers.
- Blockages can usually be prevented by the periodic b). flushing of the force main with clear water. If a blockage does occur, flushing the line using a water truck with a high pressure head pump will usually free the blockage. The blockage might be cleared by use of a power sewer rooter/rod runner, if the blockage is within the reach of this type of pipe cleaning equipment and power is available. Gas operated sewer rooters and rod runners are also available. Two-way force main cleanouts are part of the force main system. Prior to removing the cap from a cleanout, the pressure in the line needs to be released. This may be done at the pump station or the closest combination air release/air vacuum valve. Provisions will need to be made to contain released sewage when releasing pressure.

### H. Other Emergency Considerations:

#### Contamination of Potable Water

The wastewater entering the pump station is most likely contaminated with organisms dangerous to the public health. Therefore, it is of utmost importance that any nearby potable water supply not be contaminated by a spill and /or flooding. Although it is unlikely under ordinary circumstances, if there is any reason to suspect potential contamination of the potable water supply, the gate valve, located where the water main enters the plant in question, should be closed. The source of the possible contamination should be closed. The source of the possible contamination should be investigated and prevented.

Under emergency conditions such as floods, hurricanes or windstorms, earthquakes, fires, explosion, or excessive cold, extra precautions are required to prevent contamination of the potable water system.

#### 2. Personnel Absence

There are many causes of personnel absence. Some of the major ones are accidents, epidemics, sickness, personal leave, vacations, holidays and weather conditions. To ensure that the plant does not have to operate understaffed, substitute or reserve operators should be on 24-hours call. Also, the Utility's full time operations and maintenance staff members should be trained to handle more than one job so that they can fill in when necessary. Vacations should be scheduled to alleviate personnel shortages as much as possible. Some reserve operators could be recruited from the neighboring communities or utilities. In order for the operator to be aware of the staff and operating needs of neighboring communities or utilities, and whether they would be available in an emergency, mutual aid agreements should be established whenever practical.

# 3. Personal Injuries or Illness

A number of designated people on the operations and maintenance staff should receive first aid, artificial respiration instructions and assist in providing periodic training to all other personnel. The operating and maintenance personnel are to report all injuries to their supervisor. The injuries should be recorded in a logbook. The information should include time of accident, locations,

alleged causes, person(s) involved, and action taken. See Red Cross First Aid Manual for detailed instructions.

In the event of an injury occurring, the basic principles of first aid apply:

- a). Give only the urgently necessary first aid suggested in the Red Cross Manual.
- b). Have the victim lie down.
- c). Check for injuries
- a). Plan what to do.
- e). Carry out the indicated procedures.

Act quickly as each second of delay may be critically important. The following order for treatment response is suggested:

- a). Sever bleeding,
- b). Stoppage if breathing, when artificial respiration should help.
- c). Poisoning. The proper first aid should be administered by personnel trained in first aid procedures. While the first aider's time and attention are devoted to the patient, someone else should go or call for a physician.

Illness of plant personnel, including diarrhea disorders and possible virus infections of eyes, nose, and throat, should also be reported and recorded. This procedure is important even if the illness does not appear to be directly attributable to working conditions at the time of occurrence.

#### 4. Power Loss

If a power failure occurs at any time, it will stop the pump station operation. Always have flashlight available at night. If interruption is more than a momentary interruption, proceed as follows:

a). Check with power company to determine, if possible, the probable time of service resumption.

- b). Activate stand-by generator if it does not have an automatic transfer switch.
- Transport a portable generator to the station, if station does not have a permanent stand-by generator.

Once electric company power is available. Deactivate stand-by power and check electrical equipment, and motors for proper functioning in accordance to the manufacturer's recommendations.

#### 5. Spills

Immediately telephone the Arizona Department of Environmental Quality (ADEQ) and be prepared to give the following information:

- a). Type of spill
- b). Procedures being implemented to minimize harmful effects of the spill
- c). Any assistance required to help contain the spill.
- d). Any immediate danger to public health.
- e). Location of spill

A report containing the following information is to be sent to ADEQ:

- a). Cause of spill.
- b). Description of discharge.
- c). Any assistance required to help contain the spill.
- d). Duration of spill, if already corrected.
- e). Steps taken to prevent such a spill from occurring again or plans which will be implemented within a stated period to prevent such a condition from reoccurring.

# 6. Ruptures and Stoppages

Ruptures of pipes may be caused by natural causes such as earthquakes, structural failure, ect. the section of pipe involved should be closed off at the nearest valve in both directions from the break, and the ruptured section removed and replaced. In many cases the flow can be rerouted without serious effects on the wastewater system. Piping plans and schematics should be consulted for alternate methods of operation. Stoppage may be caused by solids build up or solid objects lodging somewhere in the piping system. The plugged section can be cleared while rerouting the flow through another pipeline. Good preventive maintenance (periodic flushing) will aid in preventing a build up of solids.

Repairs should be done as quickly as possible; however, all safety precautions should be carefully observed. Caution should be used when unplugging stoppages as hazardous gases may be released when the stoppage is cleared.

## 7. Helpful Agencies

### a). Fire Department

Cares should be taken to maintain good relations with the Fire Department. They should be asked to make a check of the pump station every six (6) months to guard against potential fire hazards. Members of the fire department could be called upon to act as substitute operators during emergency situation. Explore the possibilities of establishing a mutual aid agreement with them.

### b). Police Department

Make arrangements with the Pinal County Sheriffs
Department to patrol the perimeter of the pump
station periodically, especially during evening hours,
to guard against possible sabotage or vandalism.
Keep the telephone number of the police
department posted conspicuously for an emergency
reference.

# c). Contractors and Repair Agencies

To guard against prolonged major equipment breakdown, make a listing of agencies that will provide 24-hour service.

8. <u>Mutual Aid Agreements with Adjacent Communities and Private Companies.</u>

Many nearby agencies and businesses employ personnel or offer service that can be very helpful during emergencies. Written mutual agreements to help during emergencies should be made with these agencies and businesses. Some examples of groups with whom mutual aid agreements should be developed are as follows:

- a). Nearby water and wastewater utilities.
- b). Industrial firms.
- c). Construction companies
- d). Electric, gas, and telephone utilities.
- e). Fire and police departments.
- f). Civil defense organizations.
- a). Health departments
- h). Rescue squads

Mutual assistance programs with the above organizations can provide the following:

- a). Emergency equipment and supplies.
- b). Spare parts.
- c). Specialized maintenance skills.
- d). Auxiliary operating personnel.
- e). chemists and/ or sanitary engineers.
- f). Medical assistance.

#### 9. Physician

All questions regarding bodily infections should be directed to the Utility's designated physician. Workers who come in contact with wastewater or sludges could be exposed to waterborne diseases such as typhold, amoebic dysentery, infectious hepatitis, and many others. Tetanus and skin infection from cuts and chemical attack, and eye, ear, nose, and throat infections from aerosol borne pathogens are also possible.

Barrier creams which protect hands from chemical burn are available at a minimal cost and are quite effective.

Typhoid and tetanus inoculations are often used. For protection against tetanus, a series of two injections of tetanus toxiod (one month apart) should be given and repeated every three years. An adequate inoculation program to protect the employees must be developed by the physician.

If an employee becomes ill, his weekly time report should list the ailment, the time is suffered, and the attending physician, if any.

#### Emergency Telephone List:

A list of emergency telephone numbers is to be developed in case of any emergency which requires contacting the agencies and/or individuals listed. Following is a list of numbers to begin with.

Johnson Utilities Inc.	480-998-3300
National Response Center	800-424-8802
ADEQ Hotline	800-234-5677
ADEQ	602-207-4513
APS Power	520-421-8400
Pinal County Sheriff	800-352-3796
Rural Metro Fire First Aid	911

#### 6.9 FINAL OPERATIONS & MAINTENANCE MANUAL

A final operations and maintenance manual is to be developed as soon as the pump station is constructed and is operational. Once the final operations and maintenance manual is developed, it is to be continuously updated as long as the pump station is in operation. The final manual is to be well organized for easy retrieval of information and procedures. Superfluous information, materials and procedures should be edited out.

#### 6.10 PROPOSED LIFT STATION EQUIPMENT DATA

Hydromatic S4LRC Non-clog, 3450 RPM, 50 HP,

Submersible Pump

Metal to Metal Guide Rail, Wet Well Access Cover.

Concrete Sealants Conceal CS-IOI Concrete Joint Sealant

Thunderbird Link-Seal Pipe/Wall Sealer

ITT Flight ENM-10 Liquid Level Sensor, Grit Chamber & Valve Vault

Access Covers, &

Cable Holders

Waterman PF-25W Cast Iron Flap Gate Valve

American Flow Control 50-SC Swing Check Valve

Val-Matic 80IBW Sewage Combination Air Release & AirNacuum Valve

American Flow Control 50 - Line Double Disc Gate Valve

McCrometer Mx Magmeter Electromagnetic Flow Meter

US Pipe Ductile Iron Pipe & Fittings

P W Pipe C900 PVC Pipe

EBAA Iron Sales Pipe Joint Restraints

Smith-Blair Steel Couplings

Onan 65GGHB Back-up Generator Set

Onan OTIII Automatic Transfer Switch

Smith Blair 981 or Ebba Iron 1000 Pipe Joint Restraints for Mechanical

Smith Blair 982 or Ebba Iron 1100 Pipe Joint Restraints for Bell and Spigot Joints.

#### 6.11 POTENTIAL MAINTENANCE EQUIPMENT

Them Lift Station Pump Hoist Pipe Cleaning Equipment Aries Sewer Television Inspection Equipment Miscellaneous Sewer Tools.

#### 7.0 REFERENCES

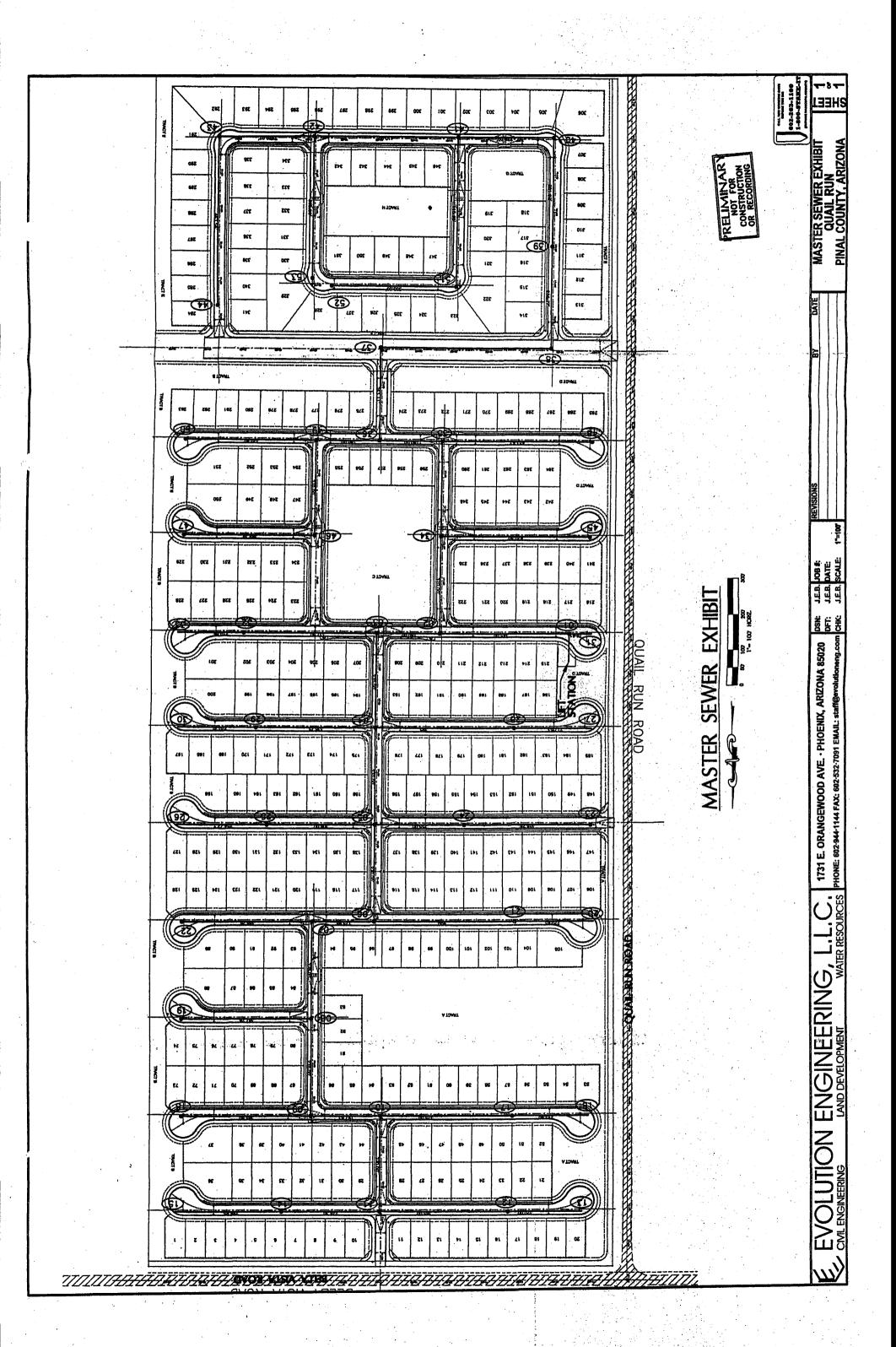
- Johnson Utilities Company Design Guide and Standard Details May 2003.
- Arizona Department of Environmental Quality, Bulletin No. 11,
   Minimum requirements for design, submittal of plans & specs of sewage works.
- Arizona Administrative Code, Title 18, Chapter 9, Section E-301
- Johnson Utilities, Heritage Road/Felix Road Wastewater Pump Station & Force Main Design Concept Report & Initial Operations & Maintenance Manual, March 2002, Can-Am Engineering.
- Maricopa Association of Governments (M.A.G.) Standards, Arizona, 1998 includes revisions through 2004.

#### 8.0 SUMMARY

The proposed pipe and manhole locations are shown on the proposed sewer layout for Quall Run (Appendix 'A'). The gravity collection system will adequately convey the wastewater collected by the study area to the proposed liftstation located near Tract D. The wastewater flows will then be pumped by the liftstation through a 4-inch force main to the grit chamber of another lift station located near the intersection of Judd Road and Felix Road in the Southeast corner of Section 19. More particularly, the force main alignment will run south along Quall Run Road from the Quall Run development to Judd Road. It will then go east along Judd Road to the Northwest corner of the intersection Felix and Judd Roads where it will discharge into the existing grit chamber designed by Canam Engineering. Refer to the Heritage Road & Felix Road Wastewater Pump Station & Force Main Design Report prepared by Can-am engineering dated March 2002.

When constructed in accordance with this report, Johnson Utilities design standards, and A.D.E.Q. requirements, the system described by this study will serve the wastewater needs of the Quail Run development.

APPENDIX A



APPENDIX B

Project: Quail Run Date: 12/21/2004 Designer: J. Bishop

Average Daily Flow:

90 GPCD

Population Density for Single Family Development:

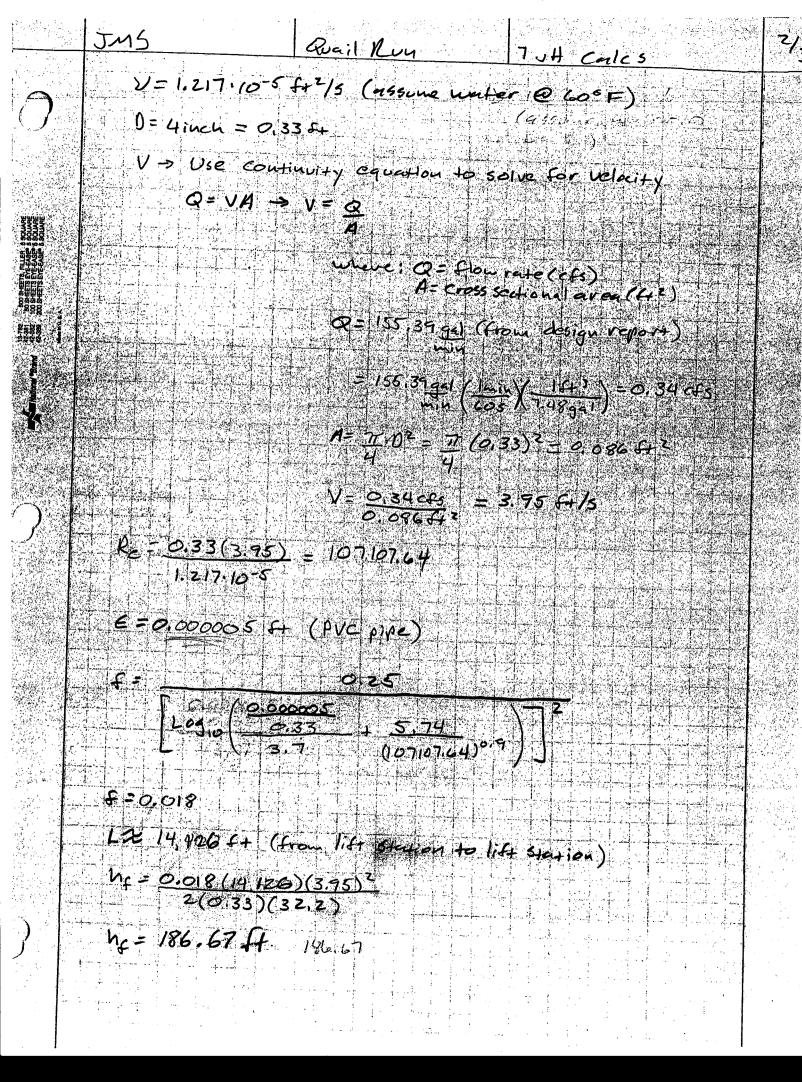
2.6 persons per dwelling unit

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Full Flow Velocity	(SOL)	2.14	5.40	2.13	2.54	2.13	3.46		2 4 4	4.74			2.13	2.13	3.79	1		2.14	2.32	3.54		2 13	2.25	3.81		2.14	.2.89				2.13	2.14	2.13		4 5	244	2.14		2.14	
Peak Flow Velocity	100	10.0	21:12		0.98	1.07	1.20	1.19	070	600	1.35		0.42	1.03	1.22	1 6			1.03	1.23	1.65		0.97	1.18	3.1		0.88	1.82		•	0,92	86.0	1.07	10.0	\$ 5	3 8	1 07		99.0	3
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Peak Factor	3.63	╀		3.62		3.62	-	3.62	3.62	+	-	COL	3.62	3.62	+	+	FACE FACE FACE FACE FACE FACE FACE FACE	Н	$\dashv$	3.62	100	3.62	_	3.62	1 200		2000	2.56			3.62	_		3 62	369	3.62	+-	192.6	3.62	ł
Sewer Capacity Ratio Cumulative Avg. Daily Flow d/D (%)	6.61	921			6.76%	7.75%	9.31%	9.21%	2.34%	5.85%	12.89%		1.80%	7.34%	9.57%	14.01%		1000	7.25%	9.67%	16.79%		6.61%	8.97%	3.5.0		2.68%	2/1/07%			6.06%	6.76%	%SZZ	5.97%	7.34%	7.67	7.75%	\$100 U.S. W. Spill	3.63%	
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<b>a</b>	4 230	4.230		0	4,410	1,440	2,790	8,460	450	2,790	17,100		270	2 790	1.13	20,340		0	5,130	4,230	026,82	0	4,230	3,780	00,000	0	3,060	46,800			3,510	006	0,77	J. ULS	2,810	8	5,850		1,170	
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20E	7.87	7.58		13.89	68.7	15.12	+		16.15	7.75		30 17	15.38	7.64	15.31			16.07	80 2	9')		17.57	7.9	SC.		17.78	7.69				7.94	8.56	87.	8.91	8.04	8.4			8.89	
Downstream Proposed : FG Elev. 1	1545.11	1545.11		1545.12	1343.12	1545.2	7.040.7		1543.4	1543.4		77.07.27	1542.11	1542.11	1542			1542.47	1942.47	1342.47		1541.66	1541.66	341.85		1540.35	1540.35				1543.2	1542.52	1542.52	1540.94	1542.24	1540.94			1540.61	
Upstream Droposed FG Elev.	1541,47	1546.5		1545.11	1341.03	1545.12	20.00		1545:2	1547.62		200	1590.46	1546.49	1542.11	w.Z		1542	1542.05	1344.(0	April 1995	1542.47	1539.92	1945,79			1543.72				1544.55		15.55	1542.52	1543.42	1542.24			1540.94	TWO THE
E	1531.42	1536.03		1530.2	1330	1529.25	1330.03		1528.02	1534.36		1507	1567	1534.43	1526.13	•		1524.9	1531.3	1331.3			1529.43	1528.43	1 Ag		1532.2				1534.84		1555/35 F	1532.05	1534.04	1532.25			1531.02	V VV27
Upstream II Sewer Inv. (feet)	1533.6	1538.92		1531.22	1333.10	1530	1340.63		1529.05	1539.87	THE STATE OF THE PARTY OF THE P	1500 00	1524.66	1538.85	1526.8			1525.93	1534.05	1337.10			1532.02	7.000		1523.88	1536.03				1536.61	1534.64	155551	1533.61	1535.38	1533.84		450000	1532.05	10000
Downstream Node	11	11		2 5	2 0	n o	,		8	8		7	4	2	9			5	C			4	4	*		3	8				43	42	75	41	51	41			₽;	000
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	Peak Flow Velocity	•	1.32				0.81	8	1.02		0.61	0.61	8	18		990	0.97	153			0.86	1.57			0.49	161	183		0.84	8	2.06	
•	Average Daily Flow Velocity		0.9000				0.5500	0.000	0.6900		0.4100	0.4100	0.9800	0.6900		0.4400	0.6600	1.0800			0.5800	1.1400			0.3300	1.1700	1.3800	The second second	0.5700	0.6000	1.5800	
, .	Sewer Capacity Ratio Cumulative	<ul> <li>Peak Flow</li> </ul>	%06:0			,0,00	%12.6	8.21%	13.17%		5.85%	5.85%	22.16%	13.17%		99.9	12.22%	25.97%			10.01%	27.28%			4.23%	28.51%	35.60%		9.70%	10.46%	45.93%	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1
	Total Pipe Capacity		Alia tan area area area area area area area ar			000	575 779	241,070	1,189,315		1,238,266	481,308	,			479,755	552,585			482,101	551,277			493,664	479,755				481.026	551,933		
	Cumulative Peak Flow		51921			72.7	0,4(1)	†	1/319		7	3258	53278	71197		4,235	15313	78475		0	10100	85529		6	1629	80541	208183		9,448	11077	202523	100.757.007
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	Peak Factor		3.14			283	3.02	1 2	3.02	1000	3 6	+	┪	3.62		3.62	3.62	2.9		-		2.9		3.62	3.62	2.74	2.56		3.62	3.62	Н	3.00
	Sewer Capacity Ratio Cumulative Avg.	Daily Flow	10.86%			5.01%	5.01%	7 16%	4.10 M	2 270/	2 226/10	3.22.70	12.44%	7.16%		3.63%	6.61%	14.48%			5.45%	15.77%	(5) XI		2.34%	16.59%	21.71%		5.27%	5.68%	27.40%	
	Cumulative Average Daily	MOL	15,930			2340	2,340	4 950	OCC'L	000	38	46 630	10,830	21,780	1000	1,170	4,230	26,010		0	2,790	28,800	Section of the sectio	٥	450	29,250	79,110		2,610	3,060	82,170	
	Average Daily Flow	44 070	0/8/11			2 340	0	2 610	O O O	oug oug	3	45 030	02,870	4,950		1,170	3,060	71,780		0	7,790	26,010			450	28,800	49,860		2,610	450	79,110	
	System	133	351			26	0	29		10	6	, E		33		13	8	747		<b>3</b> (2	15	289		0	0	320	554		29	5	879	
	Dwelling Units	2	0	The Assessment of the State of		9	0	=		4	9	. 2	3	17		۹	2 6	25		> ;	71	111	0	٠,	7	2	213		=	2	338	
	Proposed Slope	17				0.0078	0.0075	0.0232		0.0252	0.0038			XXX XXX CONTRACTOR	. 0000	0.0038	0.00.0	A CANADA CANADA	00000	0.0030	0.0030		0.0040	0000	0.000				0.0038	0.0050		
Postimosta	Sewer Cength					369	270	370		180	263			Sal Sales September 5	100	35	453		970	424	124		270	2 2	3			000	ရှိ ရ	73		
	Line Diameter					80	8	8		80	8			S POST STATE	•	۰	٠		σ	٥	•		8	, «					٥	Σ.		
Ectimoted	Sewer @ Downstream Node	}				7.56	11.5	11.7		15.95	15.75				16.67	10.07 40.7E	27.22		15.85	10.38	30.50		19.02	19 22	-			40.05	3.03	8.09		
Fetimated	Depth of Sewer @ Upstream Node					8.07	7.76	5.21		11.7	16.75			はないない。	15.05	7 97			15.87	6.2			15.86	17.7				40.22	7.05	7.33		
Fetimated 1	Downstream Proposed FG Elev,					1539.67	1541.39	1541.39		1541.11	1541.11				1540 15	1540 15		The second secon	1539 11	1539.11			1541.19	1541.19				1540 43	1540 43	54.75		
Estimated	Upstream Proposed FG Elev.				•	1543.06	1539.67	1543.49		1541:39	1543.11				1541 11	1539 48	è		1540.15	1538.73	i		1539.11	1540.35				1541 10	1840	2		
Estimated	· 6					1532.11	1529.89	1529.69		1525.16	1525.36				1524.48	1529 39			1523.25	1528.73		***************************************	1522.17	1521.97				1520 58	1531 74	1		
Estimated	Upstream Sewer Inv.					1534.99	1531.91	1538.28		1529.69	1526.36			The second second second	1525.16	1531.51			1524.28	1530.83			1523.25	1522.65				1521 97	1532.05	-		
	Downstream Node					46	69	84		8	98				35	35			34	용			2	2					-			
	Upstream Node			1	ļ	4	\$ 5	8	9	2	37				- %	84	ŀ	D. T. S.	35	45			34	3				2	31			
		Total @ 41						and the second of the second of the second				Total @ 37	Total @ 49				Total @ 36				Total @ 35	THE PROPERTY.			Total @ 34	Total @ 3	THE STATE OF			Total @ 2		

APPENDIX C

	JMS	Quail Run	Tuth calcs	3
amos amos amos amos amos		the that has  TOH = total elymphic he  ha = Static hand (fa)  h = friction hand (fa)  his Melberty hand (fa)  hims Minor losses (fa)		
200 9 000 100 100 100 100 100 100 100 100	Yz=21	SE: Z = Elevano en la E = Elevano en la E = Hasous Ez+≥ =441	indan nakan para yang dalah dara nakan belanggar bahar bahar darah darah darah kalan kalan karan bahar bahar b	
	Friton Hea	eve: f= Davey ff corion for L= Length (f+) V= velocity (f+)	Jention = 32,2 C+/6	
	一起,有是有一个一个数数的	109.0 1 25 Rep. 1	e = Jain equation	
		where:   Respectively  Where:	Salaharan Alaharan Editarra Salaharan Salaharan Salaharan Salaharan Salaharan Salaharan Salaharan Salaharan Sa	-/s)



	JMS	Quail Run	7. H Calcs	3/3
	Welocity Head No - V2 29			
HETTS, P.L.FT. & COLLAR ETS FEELOWS SOULME ETS FEELOWS SOULME ETS FEELOWS SOULME	$h_V = (3.95)^2$ 2(32.2) $h_V = 0.29.54$			
77 77 11 4544 345 007 68507 PALES, RESIDENT 345 001 6857 PALES, RESIDENT 345 008 827 81	Minor Head Losses  Where "h.	head loss the		
*	4	head loss through and come bends and team.	enly induor lesses) 5-45° beads in	
		Le (45° elbar) = 5,5 fg	我的感染,不是是这些的特殊的意思的。我们还是这样的,不是我们是是自己的说,这是我们的,我们也不是一个好的更好的。""我们是我们的这个一样的。""我们是我们的"	
		Le (90° elbow) = 13,0 f		
		= 66%5 ft 665 (3.95)2 2 (3.2.2)		
	M = 44.52+ 186.62+0 M = 247.59f+	16.11. St = hm 24+16:16= 247.54		

**Evolution Engineering LLC** John Bishop

#### PUMP DATA SHEET 11/15/04 Hydromatic Pumps.60 Vers: Dec 2003 **HYDROMATIC**

HP HYDROMATIC\*

ection list:

Pump: S4LRC

Type: VORTEX-4 Synch speed: 3600 rpm

Impeller:

Specific Speeds:

Ns: -

**Dimensions:** Suction: -- in

**Pump Limits:** 

Temperature: 140 °F Pressure: — psi g Sphere size: 3 in

Motor: Consult vendor

Speed: 3450 rpm Dia: 8.25 in

Curve no.: PAGE 109

Nss: -

Discharge: 4 in

Power: -- hp Eye area: - in2 Search Criteria:

Flow: 155.39 US gpm

Fluid: Water at 60 °F

SG: 1 Viscosity: 1.105 cP

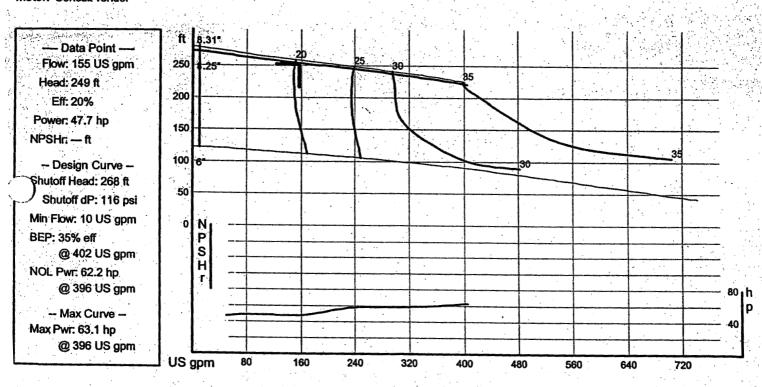
NPSHa: - ft

Advanced Criteria: none specified

Head: 247.54 ft

Vapor pressure: 0.2563 psi a

Atm pressure: 14.7 psi a

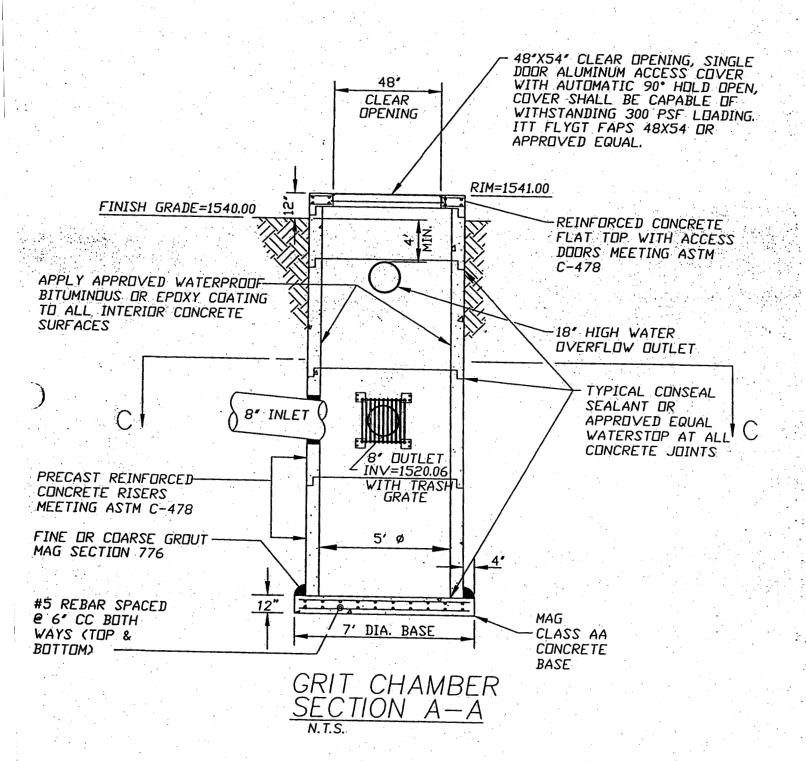


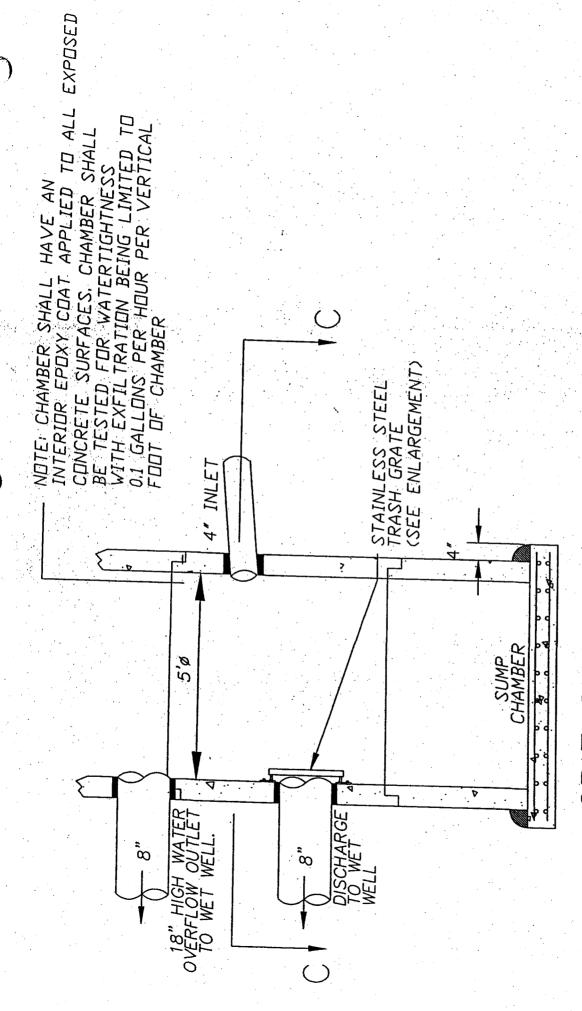
#### Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Pump %eff	Power hp	NPSHr ft
186	3450	246	22	51.4	
155	3450	249	20	47.7	
124	3450	253	17	47.8	-
93.2	3450	256	12	48.2	
62.2	3450	260	9	47.1	_

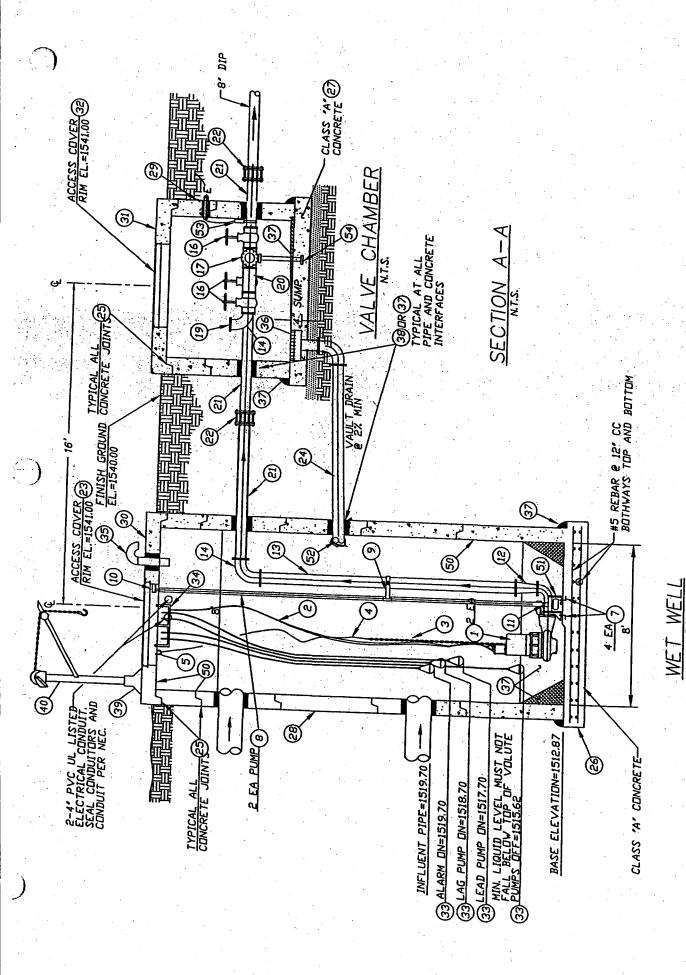
APPENDIX D

MAG FINE GROUT OR WATERTIGHT LINK SEAL OR APPROVED EQUAL WATERSTOP AT ALL PIPE/WALL INTERFACES - TYPICAL ITT FLYGT FAPS 48X54 ACCESS DOOR TRASH GRATE GRIT CHAMBER CHAMBER DETAIL (OR APPROVED EQUAL) N.T.S.

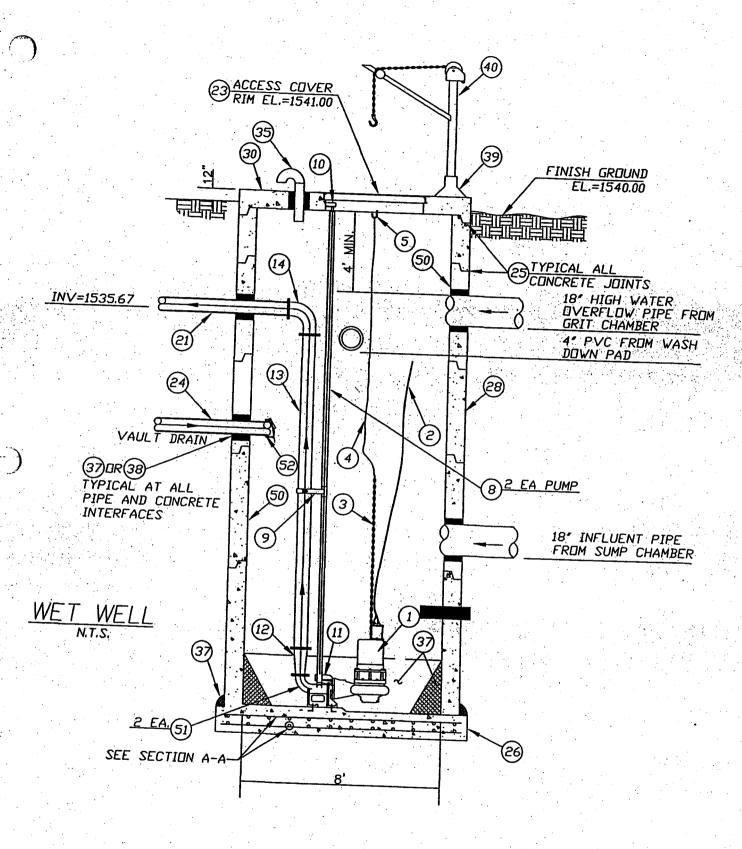




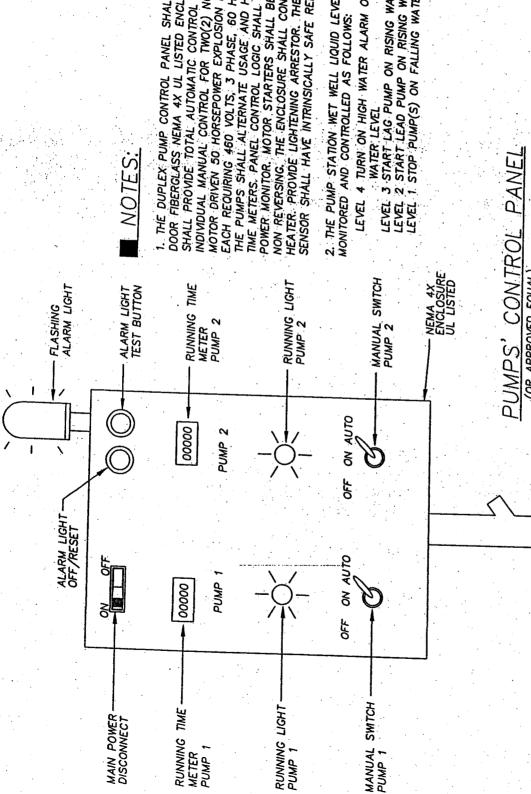
GRIT CHAMBER SECTION B-B



WET WELL & VALVE CHAMBER DETAILS OF APPROVED EQUALS



SECTION B-B



1. THE DUPLEX PUMP CONTROL PANEL SHALL BE A DOUBLE DOOR FIBERGLASS NEMA 4X UL LISTED ENCLOSURE AND SHALL PROVIDE TOTAL AUTOMATIC CONTROL AS WELL AS INDIVIDUAL MANUAL CONTROL FOR TWO(2) NON-CLOG MOTOR DRIVEN 50 HORSEPOWER EXPLOSION PROOF PUMPS, EACH REQUIRING 460 VOLTS, 3 PHASE, 60 HERTZ ELECTRICITY. THE PUMPS SHALL ALTERNATE USAGE AND HAVE INDIVIDUAL POWER MONITOR. MOTOR STARTERS SHALL BE FULL VOLTAGE NON REVERSING. THE ENCLOSURE SHALL CONTAIN A SPACE HEATER. PROVIDE LIGHTENING ARRESTOR. THE WATER LEVEL SENSOR SHALL HAVE INTRINSICALLY SAFE RELAYS.

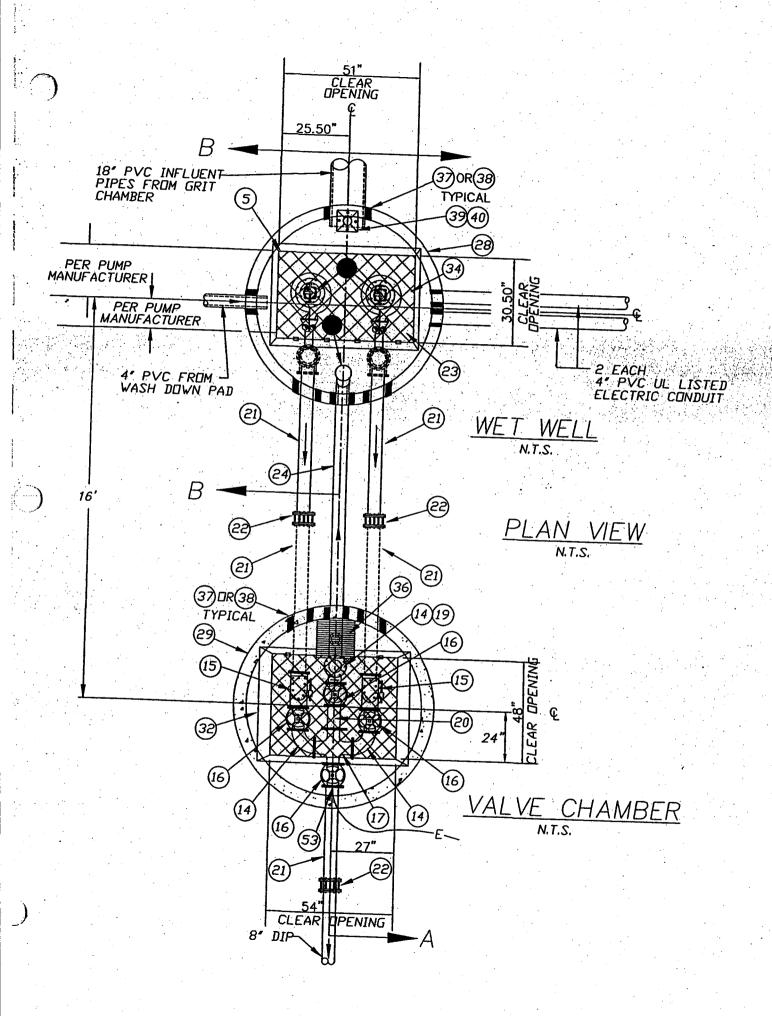
2. THE PUMP STATION WET WELL LIQUID LEVEL SHALL BE MONITORED AND CONTROLLED AS FOLLOWS:

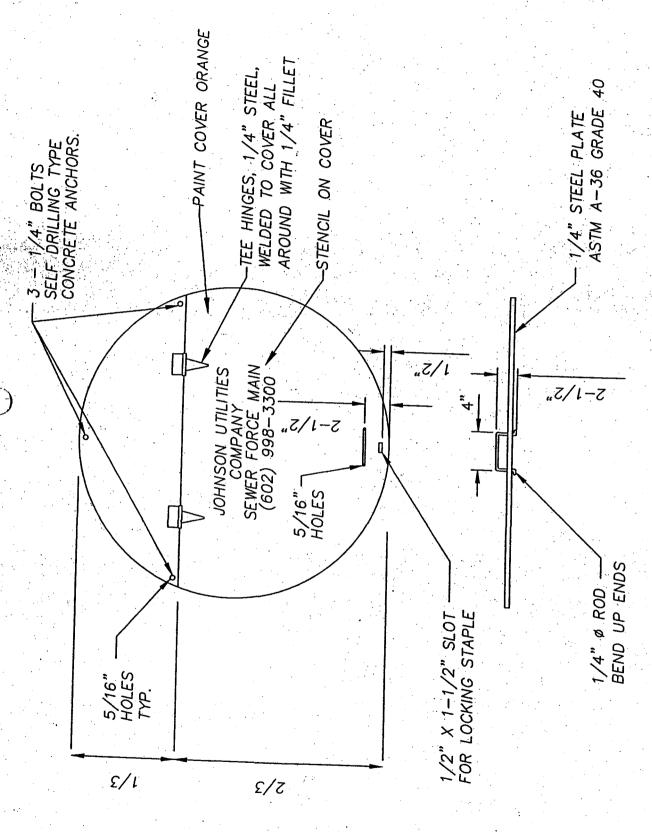
LEVEL 4 TURN ON HIGH WATER ALARM ON RISING

LEVEL 3 START LAG PUMP ON RISING WATER LEVEL LEVEL 2 START LEAD PUMP ON RISING WATER LEVEL LEVEL 1 STOP PUMP(S) ON FALLING WATER LEVEL

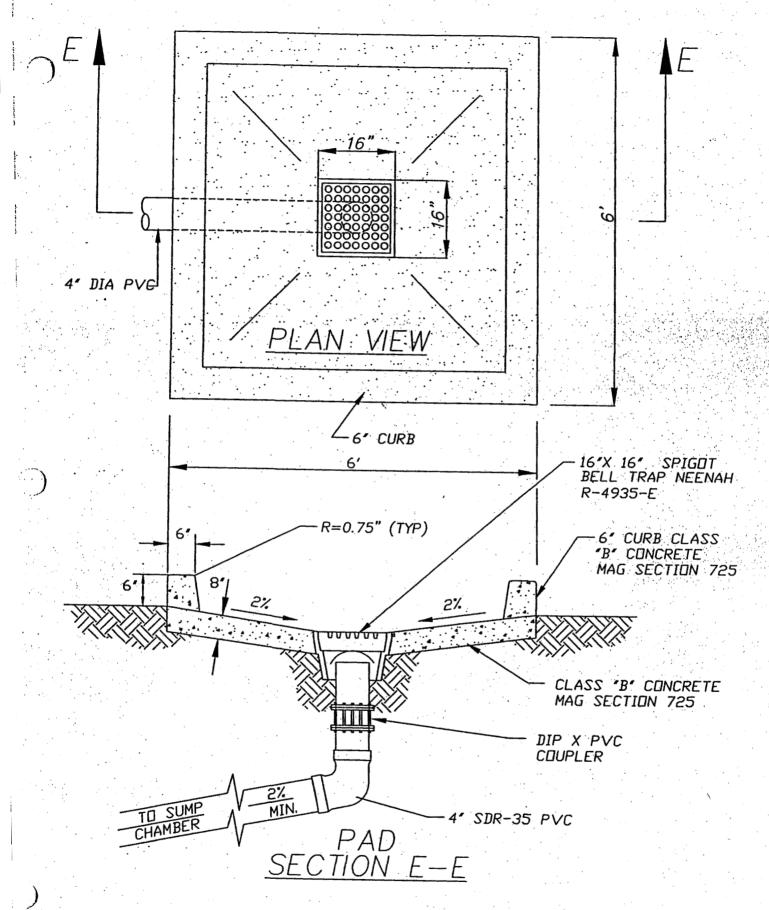
(OR APPROVED EQUAL)

CONDUIT TO PUMPS. SEAL CONDUITS & CONDUITS





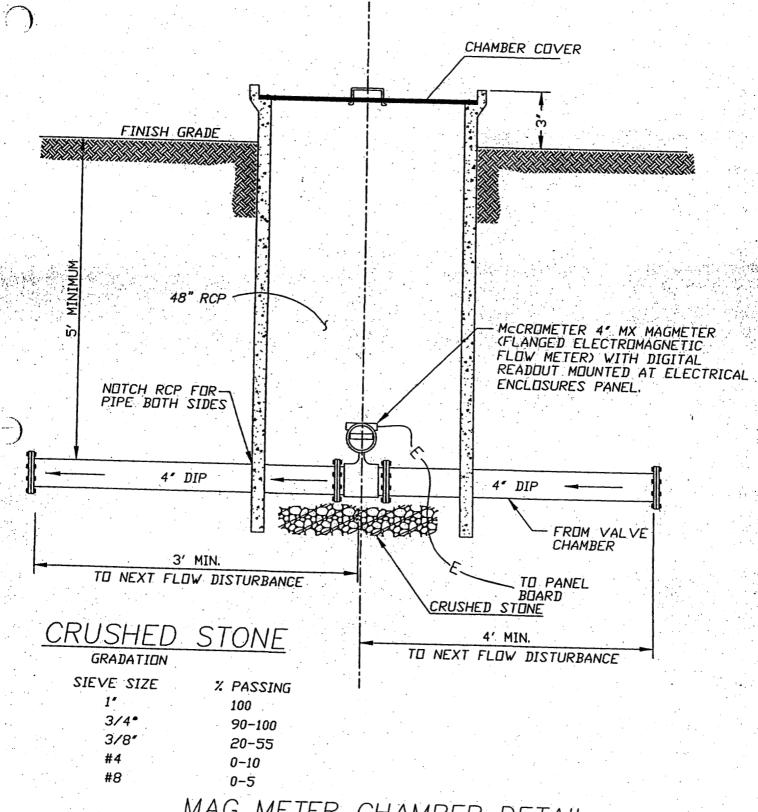
VAL VE CHAMBER COVER DETAIL OR APPRIÇED EQUALS (NON-TRAFFIC AREAS)



WASH DOWN PAD DETAIL

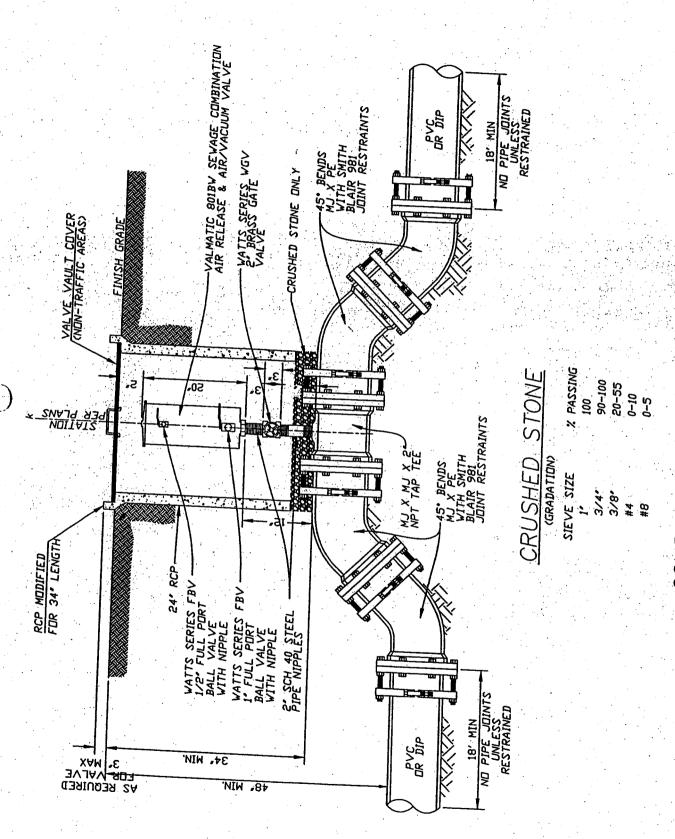
(OR APPROVED EQUAL)

N.T.S.



MAG METER CHAMBER DETAIL (OR APPROVED EQUAL)

2.T.N



COMBINATION AIR/VACUUM RELEASE
VALVE AND CHAMBER DETAIL
COR APPROVED FOUND. (NON-TRAFFIC AREAS)

SIZE OF CONCRETE PAD PER GENERATOR SUPPLIER RECOMMENDATIONS SIZED --- AUTOMATIC TRANSFER SWITCH (WITH EXERCISER) SIZE BY MANUFACTURER GENERATOR TO BE SIZED BY MANUFACTURER TO SUPPLY ALL PUMP STATION POWER NEEDS. 6'X 6'X W10 X W10 WELDED WIRE FABRIC RECOMMENDATIONS NATURAL GAS DR DIESEL FUEL GENERATOR MANUFACTURER SEE GENERATOR CLASS 'AA', 4000 PSF SONCRETE SEE GENERATOR MANUFACTURER

GENERATOR & TRANSFER SWITCH DETAIL (OR APPROVED EQUAL) N.T.S.

# MASTER WATER DESIGN REPORTS

#### RECEIVED

DEC 2 1 2004

LAND ACQUISITION

# MASTER WATER REPORT FOR QUAIL RUN

December 21, 2004

Prepared for:

Danto Real Estate Investments, Inc. 2250 E Beachcomber Dr. Gilbert, AZ 85234

Prepared by:

Evolution Engineering L.L.C. 1731 E. Orangewood Avenue Phoenix, AZ 85020 (602) 944-1144



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APPENDIX E: Fire Flow Demands	

#### INTRODUCTION

Quail Run is an approximately 100 acre single family residential development located in unincorporated Pinal County. The site will consist of single family residences with open space corridors throughout. The site is bounded on the north by Bella Vista Road, unsubdivided land on the east and south and by Quail Run Road on the west. More specifically, the site is located in a portion of the west half of the west half of Section 24, Township 3 South, Range 8 East, of the Gila and Salt River Base and Meridian, Pinal County, Arizona. See Figure 1 for vicinity map. The land surrounding Quail Run is currently unsubdivided. There is residential development planned to the north and west of the site.

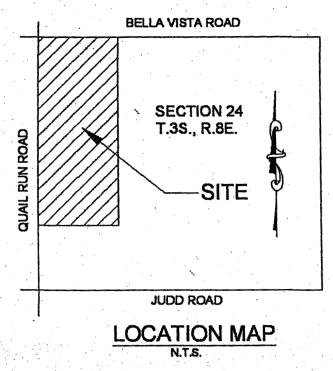


Figure 1: Vicinity Map

The purpose of this report is to analyze the conceptual design of the onsite water system for Quall Run. This report recommends line sizes and locations as well as presents the requirements for other water appurtenances associated with the development of Quall Run.

#### **DESIGN CRITERIA**

There were two types of demands used for this study. Type 1 demands consist of residential demands, subject to peaking factors. Type 2 demands represent irrigation requirements for developed open space and parks. Type 2 demands were not subjected to maximum day and peak hour factors in this study.

For purposes of this study, the average day demand for single family residential development (Type 1) is 100 gallons per capita per day (gpcd) with 2.6 capita/dwelling unit (DU), as obtained from the WLB report. This produces an average day demand of 260 gpd/DU or 0.18 gallons per minute (gpm). The average day demand is multiplied by a peaking factor of 1.8 to determine max day demands and by a peaking factor of 3.0 to determine peak hour demands. The demand for developed open space and parks (Type 2) is 1,500 gpd/acre, or 1.04 gpm/acre, and is not subject to the max day or peak hour peaking factors. In addition to the demands listed above, fire flow demands were considered at various points throughout the system. The fire flow demand used in this analysis was 1,500 gpm during max day demand for residential fire flow scenarios.

The system was designed to maintain a minimum static pressure of 55 psi. The minimum design pressure used for peak hour and for max day plus fire flow demands were 40 psi and 20 psi, respectively.

It is assumed that Johnson Utilities will adequate storage and booster facilities in place to serve this site prior to its connection to the overall system. There is currently an existing 8 inch water main in Bella Vista Road, adjacent to this site. This report specified a minimum pressure head that must be delivered in the existing water main to service the Quail Run development. Any offsite infrastructure necessary to meet this requirement will be designed and constructed by Johnson Utilities.

The onsite distribution system will be designed in accordance with the Johnson Utilities Company Design Guidelines and Standard Details. Where the Design Guidelines and Standard Details do not provide specific information current Arizona Department of Environmental Quality (ADEQ) and/or Maricopa Association of Governments (MAG) requirements, specifications or details will be used. Water valves will be placed according to current Johnson Utilities and ADEQ requirements. Fire hydrants will be placed in accordance with current, applicable fire codes. Air release valves will be located at system high points. The Hazen-Williams roughness coefficient, C value, for all pipes used is 120; the minimum pipe diameter used is 6 inches; secondary 8 inch distribution loops will be incorporated into the onsite system; and sufficient system loops will be provided to minimize the effects of out of service water mains.

#### **DEMANDS**

As outlined above, there are two types of demands associated with this development: residential and irrigated open space/parks. For hydraulic modeling purposes, these demands were assigned the labels of Type 1 and Type 2, respectively. Residential demands are based upon per capita usage,

population density and dwelling unit density criteria. Peaking factors are applied to the average day residential demands to determine max day and peak hour demands. Open space and park demands are determined on a per acre basis and are not subject to the max day and peak hour peaking factors. The demands for this project are summarized below in Tables 1 through 4.

ind .			Space (acre)	Demand (gpa)	
				sorriaria Opas	
oca 2	2.6	351	N/A	91,260	
I .	VA	N/A	19	28,500	
cie			Total	119,760	
		O NA	O N/A N/A	0 N/A N/A 19	

Table 1: Average Day Demands

	Averag Dem		Max	Day Demo	and	Peak Hour Demand			
Land Use	gpd	gpm	Peaking Factor	gpd	gpm	Peaking Factor	gpd	gpm	
Single Family	91,260	63.4	1.8	164,268	114.1	3.0	273,780	190.2	
Developed Open Space	28,500	19.8	<del>-</del>	28,500	19.8	<b></b>	28,500	19.8	
Total	119,760	83.2		192,768	133.9		302,280	210.0	

Table 2: Max Day and Peak Hour Demands

In addition to the residential and developed open space demands presented above, there is also a fire flow requirement. The residential fire flow requirement considers an additional 1,000 gpm demand during the max day demand scenario. The total fire flow demand is presented in Table 3.

	Max Day D	emand	Fire Flow Demand	Max Day + Fire Flow Demand							
Land Use	gpd	gpm	(gpm)	(gpm)							
Single Family	164,268	114.1	1,000	1,114.1							
Developed Open Space	28,500	19.8		19.8							
Total	192,768	133.9		1,133.9							

Table 3: Max Day Plus Fire Flow Demand

From the demand tables above, it is evident that the max day plus fire flow demand scenario will govern the design of the onsite water system. Note that the required minimum pressures during the peak hour demand scenario are greater than those required during the max day plus fire flow scenario.

Therefore, the peak hour demand scenario will also be analyzed to ensure that the pressure requirements are satisfied.

#### EXISTING FACILITIES/CONDITIONS

The existing water system infrastructure for this area is minimal. There is an existing 8 inch water main in Bella Vista Road, adjacent to this site, along the northern border of this property. There are other developments planned for the area and should be considered in the overall Johnson Utilities modeling as more reliable design information becomes available.

The existing water line in Bella Vista Road is fed primarily from the Johnson Utilities Main Plant located to the west, in Johnson Ranch. Also, as mentioned above, it was assumed that the Johnson Utilities water system has adequate storage and pumping capacity to meet the needs of this site. This report determined a minimum amount of head that must be supplied to the Quail Run connection to the existing water line and it was assumed that Johnson Utilities has adequate Infrastructure to supply this pressure. This data was used in the development of the hydraulic models presented in this report and is discussed in more detail below.

#### PROPOSED FACILITIES

Although the development may be phased, the proposed facilities were sized based upon the full buildout requirements for the site. No offsite construction is anticipated with this development and is not considered in any of the attached analyses. Any buy-back or extension agreements for offsite infrastructure will need to be negotiated by the developer and Johnson Utilities.

The onsite water system will be constructed of C900 PVC per Johnson Utilities requirements. The onsite system will consist of 8 inch lines throughout the site. Each portion of the subdivision will be served by an 8 inch interior loop to minimize outages experienced due to waterline breaks and maintenance. Onsite lines will be connected to the existing water main adjacent to the project. Two 8 inch connections will be provided to serve this site, one at the northern entrance to the subdivision and the second at the northeastern corner of the subdivision.

Onsite service lines shall be 1 inch diameter and installed per Johnson Utilities and MAG standard details. Based upon the modeling results included herein, it is not anticipated that PRV's will be required with this project.

#### WATER MODEL

The program used to analyze the pipe hydraulics for this project was KYPIPE4 (version 1.2). KYPIPE was used to model the proposed junction node pressures, demands, line sizes, losses and the head supplied to the system. The proposed water network layout for each demand scenario is shown in the corresponding appendices.

For modeling purposes, the elevation at each junction nodes was assumed to be 4.5 feet below proposed grade. Demands at each node were determined based upon the probable number of lots and area of open space that will draw from respective nodes. The demands used were described above in the Demands section of this report.

Pipe sizes were modeled as shown in the figures included in the appendices. The onsite pipes consist of 8 Inch lines throughout. The existing pipe diameter was used for the line Bella Vista Road, as described above in the Existing Facilities/Conditions section of this report. A Hazen-Williams roughness coefficient, C, of 120 was used for all pipes in the network. Minor losses, through valves, tees and elbows, were accounted for throughout the system. It was assumed that that there were at least two valves per tee. The loss coefficients used for losses associated with fittings is summarized below in Table 4.

Fitting Type	Minor Loss Coefficient						
45° Elbow	0.35						
90° Elbow	0.75						
Standard Tee	0.4						
Open Gate Valve	0.17						

Table 4: Minor Loss Coefficients

For the hydraulic model a reservoir was used to represent to Quall run connection to the existing system and the head was varied for each demand scenario. The difference between the reservoir elevation and grade represents the amount of head that the system must supply to meet the minimum pressure requirements. Again, it is assumed that Johnson Utilities has existing facilities that are capable of supplying the minimum amount of head to the system. Minimum pressure requirements, as described above, will all be met or exceeded as modeled in this study. The minimum and maximum pressures for each demand scenario are presented below in Table 5.

Demand Scenario	Max Pressure (psi)	At Junction Node	Req'd Max Pressure (psi)	Min Pressure (psi)	At Junction Node	Req'd Min Pressure (psi)
Average Day	47.63	J-27	80	43.79	J-11	
Max Day	47.58	J-27	80	43.75	J-11	
Peak Hour	47.47	J-27	80	43.69	J-11	40
Fire Flow	44.94	J-4	80	34.81	J-38	20

Table 5: Max and Min Pressures

The fire flow scenario presented in this report placed a residential fire flow demand at junction node J-38. Fire flows were considered at all nodes throughout the system, with the results included in Appendix E. The residential fire flow demand at junction J-38 produced the "worst case" results. That is, the fire flow demand at this node produced a pressure that was less than all other cases considered.

As discussed previously, it has been assumed that Johnson Utilities has facilities in place that will adequately serve this site. It should be noted that to meet the minimum pressure requirements in the residential fire flow scenario will require approximately 1,136 gpm at 95 feet of head to be delivered to the Quail Run connection to the existing line in Bella Vista Road.

For this study the maximum pressure allowed in the system is 80 psi (before pressure reducing measures are necessary). The maximum pressures, as modeled for this study, do not exceed 80 psi. In addition to the 80 psi maximum pressure requirement a minimum static pressure of 55 psi was also considered for this study. The highest onsite nodes, J-11 and J-12, are at an elevation of approximately 1543.90, 2.6 feet higher than the test hydrant. In a static condition 2.6 feet equates to a pressure loss of approximately 1.1 psi, indicating that to achieve a static pressure of 55 psi at the highest point in the system will require that 56.5 psi be supplied at the Quali Run connection to the existing system.

The full KYPIPE report for each demand scenario is included in the appendices that follow this text. Each report details the results of the hydraulic analysis performed for each demand scenario and lists pipeline and node data. The pipeline data include the length, diameter, connecting nodes, roughness, head loss, and line velocity. The junction data listed include the demand, elevation, hydraulic grade, and pressure.

Based upon the results summarized in the tables above and from the reports presented in the appendices, the water transmission system, as designed and presented here, will adequately serve the Quall Run development. Pressures at

each node within the system meet or exceed the minimum pressure requirements for each demand scenario. The maximum pressure of 80 psi will not be exceeded. As facilities come on line and are connected to the system, this model will need to be updated to reflect actual head and elevation data.

#### SUMMARY/CONCLUSIONS

The proposed water system for Quail Run, as presented in this report, will adequately supply this subdivision and meet the design criteria as established by Johnson Utilities. Pressures at each node in the system meet or exceed the minimum required pressures for each demand scenario. For the demand scenarios presented above, it was assumed that Johnson Utilities has infrastructure facilities available to deliver the required flows at adequate head, as discussed above. While it is anticipated that development of this project might occur in phases, the entire onsite water system will be constructed at the same time.

The line sizes, proposed grades and pressure supply node information used in this model represents the best available data at the time of this report.

## APPENDIX A:

# AVERAGE DAY MODELING RESULTS

JUNCTION DEMANDS CHANGED - PLEASE SEE RESULTS TABLE

RESULTS OBTAINED AFTER 3 TRIALS: ACCURACY = 0.00001

#### PIPELINE RESULTS

STATUS CODE:	XX -CLOSED	PIPE	CV -CHECK VALVE

	GBGB <u>B</u> B	ELFE	CV -CHECK VALV	, E1			•		
PIPE NAME	NODE 1	NUMBERS #2	FLOWRATE	HEAD LOSS	MINOR LOSS	LINE VELO.	HL/		
		<b>#</b> ~	(gpm)	(ft)	(ft)	(ft/s)	1000 (ft/ft)		
P- 1	J- 2	J- 3	32.90	0.01	0.00	0.21	0.04		
P- 2	J- 1	J- 2	28.06	0.01	0.00	0.18	0.03		
P- 3	J- 2	J- 4	1.44	0.00	0.00	0.01	0.00		
P- 4	J- 2	J- 8	-9.88	0.00	0.00	0.06	0.00		
P- 5	J- 5	J- 1	28.06	0.02	0.00	0.18	0.03		
P- 6	J- 3	J- 7	27.74	0.01	0.00	0.17	0.03		
P- 7	<b>J</b> − 3	J- 6	3.36	0.00	0.00	0.02	0.00		
P- 8	J- 8	J- 5	-55.51	0.02	0.00	0.35	0.10		
P- 9	J- 7	J-12	-6.90	0.00	0.00	0.04	0.00		
P-10	J- 7	J-10	33.02	0.01	0.00	0.21	0.04		
P-11	J-10	J-13	30.93	0.01	0.00	0.19	0.03		
P-12	J-10	J-11	-2.13	0.00	0.00	0.01	0.00		
P-13	J-12	J- 8	-44.18	0.02		0.28	0.06		
P-14	J-11	J-12	-34.80	0.01	0.00	0.22	0.04		
P-15 P-16	J-11	J- 9	31.60	0.01	0.00	0.20	0.03		
P-17	J-13	J~ 9	0.86	0.00	0.00	0.01	0.00		
P-17 P-18	J-13	J-14	28.45	0.00	0.00	0.18	0.03		
P-19	J-14	J-15	4.40	0.00	0.00	0.03			
P-20	J-14	J-16	21.71	0.00	0.00	0.14	0.02		
P-21	J-16	J-21	-5.46	0.00	0.00	0.03	0.00		
P-22	J-16 J-16	J-17	2.16	0.00	0.00	0.01	0.00		
P-23		J-18	21.41	0.00	0.00	0.13	0.02		
P-24	J-18 J-18	J-22	19.34	0.00	0.00	0.12	0.01		
P-25	J-21	J-19	-2.61	0.00	0.00	0.02	0.00		
P-26	J-18	J- 9	-30.33	0.01	0.00	0.19	0.03		
P-27	J-19	J-20	1.44	0.00	0.00	0.01			
P-28	J-22	J-21	-23.43	0.01	0.00	0.15	0.02		
P-29	J-22	J-31	5.22	0.00	0.00	0.03	0.00		
P-30	J-23	J-23 J-24	12.82	0.00	0.00	0,08	0.01		
P-31	J-23	J-26	2.12	0.00	0.00	0.01	0.00		
P-32	J-26	J-28	9.26	0.00	0.00	0.06	0.00		
P-33	J-26	J-27	5.13	0.00		0.03	0.00		
P-34	J-28	J-25	1.08	0.00	0.00	0.01	0.00		
P-35	J-28		2.12	0.00		0.01	0.00		
P-36	J-30	J-33 J-19	1.39	0.00	0.00		0.00		
P-37	J-29		-19.39	0.00	0.00	0.12	0.01		
P-38	J-31	J-34	-1.71	0.00	0.00	0.01	0.00		
P-39	J-29	J-30	-5.62		0.00	0.04	0.00		
P-40	J-32	J-31	-9.39		0.00	0.06	0.00		
P-41	J-32	J-29	-9.09	0.00					
P-42	J-34	J-37	0.40	0.00		0.00	0.00		
P-43	J-33	J-30	-12.01	0.00	0.00	0.08	0.01		
P-44	J-33	J-32	-7.07	0.00	0.00		0.00		
P-45		J-44	7.56	0.00	0.00	0.05	0.00		
P-45 P-46	J-35	J-41	1.42	0.00	0.00	0.01	0.00		
P-47	J-36	J-35	0.73	0.00	0.00	0.00	0.00		
	J-36	J-39	-4.97	0.00	0.00	0.03	0.00		
P-48	J-37	J-34	-9.58	0.00	0.00	0.06	0.00		
P-49	J-38	J-37	-8.21	0.00	0.00	0.05	0.00		
P-50	J-39	J-38	-6.77	0.00	0.00	0.04	0.00		
P-51	J-40	J-36	-1.64	0.00	0.00	0.01	0.00		
P-52	J-41	J-40	-0.02	0.00	0.00	0.00	0.00		
P-53	J-42	J-35	3.09	0.00	0.00	0.02	0.00		

P-54						
P-34	J-43	J-42	5.08 0.00	0 00	0.00	
P-55	7-44		3.00	0.00	0.03	0.00
	J-44	J-43	6.52 0.00	0.00	0.04	0 00
P-56	J- 5	R- 1				
		V- T	-83.56 0.00	0.00	0.52	0.29

#### RESULTS

NODE	NODE	EXTERNAL	HYDRAULIC	NODE	PRESSURE	NODE
NAME	TITLE	DEMAND	GRADE	ELEVATION	HEAD	PRESSURE
		(gpm)	(ft)	(ft)	(ft)	(psi)
J- 1 J- 2		0.00	1644.98	1541.30	103.68	44.93
J- 3			8) 1644.97	1540,80	104.17	45.14
J- 4		1.80(0.1	8)1644.96	1540.80	104.16	45.14
J- 5	· ·		8) 1644.97	1538.00	106.97	46.36
J- 6		0.00	1645.00	1543.80	101.20	43.85
J- 7		3.36(0.2	9)1644.96	1537.30	107.66	46.65
J- 8		1.62 (0.1	8)1644.96	1541.10	103.86	45.01
J 9		1.44(0.1	8) 1644.98	1542.70	102.28	44.32
J-10		2.12(0.3	0)1644.94	1542.90	102.04	44.22
J-11		4.22 (0.3	7)1644.95	1539.10	105.85	45.87
J-12	•	1.08(0.18	3)1644.95	1543.90	101.05	43.79
J-13		2.48 (0.28	3)1644.96	1543.90	101.06	43.79
J-14		1.62(0.18	3)1644.94	1538.10	106.84	46.30
J-15		2.34(0.18	3)1644.93	1537.80	107.13	46.42
J-15 J-16		4.40(0.35		1536.00	108.93	47.20
J-17		3.60(0.16	3)1644.93	1538.20	106.73	46.25
J-18		2.16(0.18	3)1644.93	1538.10	106.83	46.29
J-19		3.24(0.18	3)1644.92	1537.40	107.52	46.59
J-20		1.44(0.18	3)1644.92	1539.90	105.02	45.51
J-21		1.44(0.18		1536.30	108.62	47.07
J-22		1.44(0.18		1540.90	104.03	45.08
J-23		1.30(0.45	1644.92	1536.20	108.72	47.11
J-24		1.44(0.18		1537.00	107.92	46.77
J-25		2.12(0.30		1536.30	108.62	47.07
J-26		2.12(0.30	1644.92	1535.60	109.32	47.37
J-27		3.06(0.39	1644.92	1535.10	109.82	47.59
J-28		1.08(0.18	1644.92	1535.00	109.92	47.63
J-29		1.62(0.18	1644.92	1536.10	108.82	47.15
J-30		2.02(0.29	1644.92	1535.50	109.42	47.42
J-31		1.76(0.35	1644.92	1539.90	105.02	45.51
J-32		1.44(0.18	1644.92	1537.70	107.22	46.46
J-33		1.62(0.18	11644.92	1537.30	107.62	46.63
J-34	- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	0.90(0.18	)1644.92	1536.90	108.02	46.81
J-35	***	0.72(0.18	1644.92	1538.90	106.02	45.94
J-36		2.40(0.30		1536.70	108.22	46,89
J-37		2.60(0.22	1644.92	1538.40		46.16
J-38		1.76(0.35		1539.60	105.32	45.64
J-39		1.44(0.18		1540.40	104.52	45.29
J-40		1.80(0.18	1644.92	1539.50	105.42	45.68
J-41		1.62(0.18	1644.92	1539.30	105.62	45.77
J-42		1.44(0.18		1538.50	106.42	46.11
J-43		1.99(0.26		1537.20	107.72	46.68
J-44		1.44(0.18	1644.92	1538.00	106.92	46.33
R- 1		1.04(1.04		1538.60	106.32	46.07
• • • • • • • • • • • • • • • • • • •			1645.00	1550.00	95.00	41.17

- (+) INFLOWS INTO THE SYSTEM FROM SUPPLY NODES
  (-) OUTFLOWS FROM THE SYSTEM INTO SUPPLY NODES

NODE NAME	FLOWRATE NODE (gpm) TITLE	
R- 1	83.56	

NET SYSTEM OUTFLOW = 0.00 NET SYSTEM DEMAND = 83.56

## APPENDIX B:

# MAX DAY MODELING RESULTS

JUNCTION DEMANDS CHANGED - PLEASE SEE RESULTS TABLE

RESULTS OBTAINED AFTER 3 TRIALS: ACCURACY = 0.00000

#### PIPELINE RESULTS

PIPE NAME			FLOWRATE	HEAD	MINOR	LINE	
N A M E	#1	#2	(gpm)	LOSS (ft)	LOSS (ft)	VELO. (ft/s)	
P- 1	J- 2	J- 3 J- 2	52.94	0.02	0.00	0.33	0.0
P- 2	J- 1	J- 2	45.83	0.01	0.00	0.29	0.0
P- 3	J- 2	J- 4	2.64	0.00	0,00	0.02	0.0
P- 4	J- 2	J- 8	-16.35	0.01	0.00	0.10	0.0
P- 5	J- 5	J- 1	45.83	0.04	0.00	0.29	0.0
P- 6	J- 3	J- 7	44.78	0.01	0.00		0.0
P- 7 P- 8	J- 3			0.00	0.00	0.03	0.0
P- 8	J- 8	J- 5	-90.39	0.05	0.00	0.57	0.2
P-10	J- 7	J-12 J-10 J-13	-11.39		0.00	0.07	0.0
P-11	J- 7 J-10	2-10	53.20	0.02		0.33	0.0
P-12	J-10			0.02	0.00	0.32	0.0
P-13	J-12	J-11 J- 8	-2.83 -71.40	0.00	0.00	0.02	0.0
P-14	J-11	J-12	-56.33	0.04	0.00	0.45	0.1
P-15	J-11	J- 9	51.52	0.03 0.02	0.00	0.35 0.32	0.1
P-16	J-13		1.27	0.02	0.00		0.0
P-17	J-13	J-14		0.01	0.00	0.01 0.29	0.0
P-18	J-14	J-15	5.90	0.00	0.00	0.04	0.0
P-19	J-14	J-16	36.03	0.01			
P-20	J-16	J-21	-9.13	0.00	0.00		0.0
P-21	J-16	J-17	3.96	0.00	0.00	0.02	0.0
P-22	J-16	J-18	34.59	0.01	0.00		0.0
P-23	J-18	J-22	30.55	0.01	0.00		0.0
P-24	J-18	J-19	-4.53	0.00	0.00	0.03	0.0
P-25	J-21	J- 9	-49.76		0.00	0.31	0.0
P-26	J-18	J-20	2.64		0.00		0.0
P-27	J-19	J-21	-38.00	0.01	0.00	0.24	0.0
P-28	J-22	T 21	8.60	0.00	0.00	0.05	0.0
P-29	J-22	J-23	20.36	0.00	0.00	0.13	0.0
P-30	J-23	J-24	3.02	0.00	0.00		0.0
P-31	J-23	J-26	14.70	0.00	0.00		0.0
P-32	J-26	J-28	8.76	0.00	0.00		0.0
P-33	J-26	J-27	1.98	0.00	0.00	0.01	0.0
P-34	J-28	J-25	3.02	0.00	0.00	0.02	0.0
P-35	J-28	J-33	2.77	0.00		0.02	0.0
P-36	J-30	J-19	-30.82	0.01	0.00	0.19	0.0
P-37	J-29	J-34	-2.59	0.00	0.00	0.02	
P-38	J-31	J-30	-9.09	0.00	0.00	0.06	0.0
P-39	J-29	J-31	-15.05	0.00	0.00	0.09	0.0
P-40	J-32	J-29	-14.72	0.00	0.00	0.09	0.0
P-41	J-32	J-37	0.71	0.00	0.00	0,00	0.0
P-42	J-34	J-30	-19.37	0.00	0.00	0.12	. 0.0
P-43	J-33	J-32	-11.04	0.00	0.00	0.07	0.0
P-44	J-33	J-44	12.17	0.00	0.00	0.08	0.0
P-45	J-35	J-41	2.73	0.00	0.00		0.0
P-46	J-36	J-35	0.74	0.00	0.00	0.00	0.0
P-47	J-36	J-39	-7.87	0.00	0.00	0.05	0.0
P-48	J-37	J-34	-15.46	0.00	0.00	0.10	0.
P-49	J-38	J-37	-13.81	0.00	0.00	0.09	0.
P-50	J-39	J-38	-11.17	0.00	0.00	0.07	0.0
P-51	J-40	J-36	-2.88	0.00	0.00	0.02	0.
P-52	J-41	J-40	0.09	0.00	0.00	0.00	0.
P-53	J-42	J-35	5.45	0.00	0.00	0.03	0.

		• .						
P-54	٠	J-43	J-42	8.49	0.00	0.00	0.05	0.00
P-55		J-44	J-43					
P-56		J- 5	R- 1	-136.21			0.85	

#### NODE RESULTS

	NODE	NODE	EXTERNAL	HYDRAULIC	NODE	PRESSURE	NODE
٠.	NAME	TITLE	DEMAND	GRADE	ELEVATION	HEAD	PRESSURE
			(gpm)	(ft)	(ft)	(ft)	(psi)
	J- 1		0.00	1644.95	1541.30	103.65	44.91
	J- 2			33)1644.93	1540.80	104.13	45.13
	J- 3			33)1644.91	1540.80	104.11	45.11
	J- 4			33)1644.93	1538.00	106.93	46.34
	J- 5		0.00	1644.99	1543.80	101.19	43.85
	J- 6			42)1644.91	1537.30	107.61	46.63
	J- 7		2.97(0.	33)1644.90	1541.10	103.80	44.98
	J- 8		2.64(0.	33)1644.94	1542.70	102.24	44.30
	J- 9			43)1644.85	1542.90		
	J-10			48) 1644.87	1539.10		45.83
	J-11	** * .	•	33) 1644.87		100.97	43.75
	J-12			41)1644.90	1543.90	101.00	43.77
	J-13			33) 1644.85	1538.10	106.75	46.26
	J-14			33) 1644.84	1537.80	107.04	46.38
	J-15		-	47) 1644.84	1536.00	108.84	
	J-16			33) 1644.83	1538.20	106.63	47.16
5.	J-17			33) 1644.83	1538.20	106.73	46.20
	J-18			33) 1644.81	1537.40	107.41	46.25
	J-19			33) 1644.81	1539.90		46.55
	J-20			33) 1644.81	1536.30	104.91	45.46
	J-21			33) 1644.83			47.02
	J-22			55) 1644.81	1540.90	103.93	45.04
	J-23	2		33) 1644.80	1536.20	108.61	47.06
	J-24			43) 1644.80	1537.00	107.80	46.71
	J-25				1536.30	108.50	47.02
	J-26	•		43) 1644.80	1535.60	109.20	47.32
	J-27			50) 1644.80	1535.10		47.54
	J-28		•	33)1644.80	1535.00	109.80	47.58
	J-29			33)1644.80	1536.10	108.70	47.10
	J-30			42)1644.80	1535.50	109.30	47.36
	J-31			47)1644.81	1539.90	104.91	45.46
	J-32			33)1644.80	1537.70		46.41
	J-33			33)1644.80	1537.30	107.50	46.58
	J-34	•		33)1644.80		107.90	46.76
	J-35			33)1644.80	1538.90		45.89
				43)1644.79	1536.70		46.84
	J-36			37) 1644.79			46.10
	J-37		and the second of the second o	47)1644.80	1539.60		45.59
-	J-38			33)1644.80	1540.40		45.24
	J-39			33) 1644.79	1539.50	105.29	45.63
4	J-40			33) 1644.79	1539.30	105.49	45.71
, 45 S	J-41			33) 1644.79	1538.50	106.29	46.06
	J-42			39) 1644.79	1537.20	107.59	46.62
	J-43	*	2.64(0.	33)1644.79	1538.00	106.79	46.28
	J-44		1.04(1.	04) 1644.80		106.20	46.02
٠.	R- 1			1645.00	1550:.00		41 17

#### INFLOWS AND OUTFLOWS

- (+) INFLOWS INTO THE SYSTEM FROM SUPPLY NODES
  (-) OUTFLOWS FROM THE SYSTEM INTO SUPPLY NODES

NODE NAME	FLOWRATE (gpm)	NODE TITLE		
R- 1	136.21			

NET SYSTEM OUTFLOW = NET SYSTEM DEMAND =

0.00 136.21

### APPENDIX C:

# PEAK HOUR MODELING RESULTS

JUNCTION DEMANDS CHANGED - PLEASE SEE RESULTS TABLE

RESULTS OBTAINED AFTER 3 TRIALS: ACCURACY = 0.00000

PIPELINE RESULTS

NAME	PIPE	NODE	NUMBERS	FLOWRATE	HEAD	MINOR	LINE	HL/
P- 1	NAME	#1	#2		LOSS	LOSS		1000
P- 2				(dbw)	(ft)	(ft)	(ft/s)	(ft/ft)
P-3			J- 3	80.98	0.05	0.00	0.51	0.20
P- 3				70.73	0.03	0.00	0.44	0.16
P-5			J- 4	4.32	0.00	0.00	0.03	0.00
P-6			-	-25.37	0.01	0.00	0.16	0.02
P- 7						0.00	0.44	0.15
P- 8								0.14
P- 9         J- 7         J-12         -17.67         0.01         0.00         0.11         0.01           P-10         J- 7         J-10         81.43         0.05         0.00         0.51         0.20           P-11         J-10         J-11         J-3.81         0.00         0.00         0.20         0.00           P-13         J-12         J-8         -109.50         0.09         0.00         0.02         0.00           P-14         J-11         J-12         -86.47         0.06         0.00         0.54         0.22           P-15         J-11         J-12         -86.47         0.06         0.00         0.54         0.22           P-16         J-3         J-9         1.83         0.00         0.00         0.05         0.03           P-16         J-13         J-14         71.09         0.03         0.00         0.05         0.00           P-17         J-13         J-14         71.09         0.03         0.00         0.05         0.00           P-18         J-14         J-15         56.07         0.03         0.00         0.05         0.00           P-20         J-16         J-21						0.00		0.00
P-10								0.56
P-11				-17.67	0.01	0.00		0,01
P-12         J-10         J-11         -3.81         0.00         0.02         0.02           P-13         J-12         J-8         -109.50         0.09         0.00         0.69         0.34           P-14         J-11         J-9         79.42         0.05         0.00         0.50         0.19           P-15         J-11         J-9         79.42         0.05         0.00         0.50         0.19           P-16         J-13         J-9         1.83         0.00         0.00         0.01         0.00           P-17         J-13         J-14         71.09         0.03         0.00         0.45         0.15           P-18         J-14         J-15         8.00         0.00         0.00         0.05         0.05           P-19         J-14         J-16         56.07         0.03         0.00         0.03         0.00         0.05         0.01           P-20         J-16         J-21         -14.24         0.00         0.00         0.00         0.01           P-21         J-16         J-17         6.48         0.00         0.00         0.03         0.00           P-22         J-16         J								0.20
P-13	•					0.00		0.19
P-14								0.00
P-15								0.34
P-16								0.22
P-17								0.19
P-18								0.00
P-19								0.15
P-20	•							
P-21         J-16         J-17         6.48         0.00         0.04         0.00           P-22         J-16         J-18         53.03         0.02         0.00         0.33         0.99           P-23         J-18         J-22         46.23         0.02         0.00         0.29         0.07           P-24         J-18         J-19         -7.23         0.00         0.00         0.29         0.07           P-25         J-21         J-9         -76.97         0.05         0.00         0.48         0.18           P-26         J-18         J-20         4.32         0.00         0.00         0.03         0.00           P-27         J-19         J-21         -58.41         0.03         0.00         0.37         0.11           P-28         J-22         J-31         13.31         0.00         0.00         0.08         0.01           P-29         J-22         J-23         30.90         0.01         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00								0.10
P-22         J-16         J-18         53.03         0.02         0.00         0.33         0.09           P-23         J-18         J-22         46.23         0.02         0.00         0.29         0.07           P-24         J-18         J-19         -7.23         0.00         0.00         0.29         0.07           P-25         J-21         J-9         -76.97         0.05         0.00         0.48         0.18           P-26         J-18         J-20         4.32         0.00         0.00         0.03         0.00           P-27         J-19         J-21         -58.41         0.03         0.00         0.37         0.11           P-28         J-22         J-31         13.31         0.00         0.00         0.08         0.01           P-29         J-22         J-23         30.90         0.01         0.00         0.08         0.01           P-30         J-23         J-26         22.30         0.00         0.00         0.03         0.00           P-31         J-26         J-28         13.84         0.00         0.00         0.00         0.00           P-32         J-26         J-27         <					•			0.01
P-23								0.00
P-24         J-18         J-19         -7.23         0.00         0.00         0.05         0.00           P-25         J-21         J-9         -76.97         0.05         0.00         0.48         0.18           P-26         J-18         J-20         4.32         0.00         0.00         0.03         0.00           P-27         J-19         J-21         -58.41         0.03         0.00         0.37         0.11           P-28         J-22         J-31         13.31         0.00         0.00         0.98         0.11           P-29         J-22         J-23         30.90         0.01         0.00         0.19         0.03           P-30         J-23         J-24         4.28         0.00         0.00         0.01         0.02           P-31         J-23         J-26         22.30         0.00         0.00         0.01         0.02           P-32         J-26         J-28         13.84         0.00         0.00         0.02         0.00           P-33         J-26         J-27         3.24         0.00         0.00         0.02         0.00           P-34         J-28         J-25 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td>0.33</td><td>0.09</td></td<>							0.33	0.09
P-25         J-21         J-9         -76.97         0.05         0.00         0.48         0.18           P-26         J-18         J-20         4.32         0.00         0.00         0.03         0.00           P-27         J-19         J-21         -58.41         0.03         0.00         0.07         0.11           P-28         J-22         J-31         13.31         0.00         0.00         0.08         0.01           P-29         J-22         J-23         30.90         0.01         0.00         0.19         0.03           P-30         J-23         J-26         22.30         0.00         0.00         0.01         0.02           P-31         J-23         J-26         22.30         0.00         0.00         0.01         0.02           P-32         J-26         J-28         13.84         0.00         0.00         0.02         0.01           P-33         J-26         J-27         3.24         0.00         0.00         0.02         0.00           P-34         J-28         J-25         4.28         0.00         0.00         0.00         0.00           P-35         J-28         J-33 <th< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>0.07</td></th<>								0.07
P-26         J-18         J-20         4.32         0.00         0.00         0.03         0.00           P-27         J-19         J-21         -58.41         0.03         0.00         0.37         0.11           P-28         J-22         J-31         13.31         0.00         0.00         0.08         0.01           P-30         J-22         J-23         30.90         0.01         0.00         0.19         0.03           P-30         J-23         J-24         4.28         0.00         0.00         0.03         0.00           P-31         J-23         J-26         22.30         0.00         0.00         0.01         0.02           P-32         J-26         J-28         13.84         0.00         0.00         0.09         0.01           P-33         J-26         J-27         3.24         0.00         0.00         0.02         0.00           P-34         J-28         J-25         4.28         0.00         0.00         0.03         0.00           P-35         J-28         J-33         4.70         0.00         0.00         0.03         0.00           P-37         J-29         J-34         -	· · · · · · · · · · · · · · · · · · ·						0.05	0.00
P-27								0.18
P-28         J-22         J-31         13.31         0.00         0.00         0.08         0.01           P-29         J-22         J-23         30.90         0.01         0.00         0.19         0.03           P-30         J-23         J-24         4.28         0.00         0.00         0.03         0.00           P-31         J-23         J-26         22.30         0.00         0.00         0.14         0.02           P-32         J-26         J-28         13.84         0.00         0.00         0.09         0.01           P-33         J-26         J-27         3.24         0.00         0.00         0.02         0.00           P-34         J-26         J-27         3.24         0.00         0.00         0.02         0.00           P-35         J-28         J-33         4.70         0.00         0.00         0.03         0.00           P-36         J-30         J-19         -46.86         0.02         0.00         0.02         0.00           P-37         J-29         J-34         -3.82         0.00         0.00         0.02         0.00           P-38         J-31         J-30								0.00
P-29         J-22         J-23         30.90         0.01         0.00         0.19         0.03           P-30         J-23         J-24         4.28         0.00         0.00         0.03         0.00           P-31         J-23         J-26         22.30         0.00         0.00         0.14         0.02           P-32         J-26         J-28         13.84         0.00         0.00         0.09         0.01           P-33         J-26         J-27         3.24         0.00         0.00         0.02         0.00           P-34         J-28         J-25         4.28         0.00         0.00         0.02         0.00           P-35         J-28         J-33         4.70         0.00         0.00         0.03         0.00           P-36         J-30         J-19         -46.86         0.02         0.00         0.02         0.00           P-37         J-29         J-34         -3.82         0.00         0.00         0.02         0.00           P-38         J-31         J-30         -13.96         0.01         0.00         0.01         0.02           P-39         J-29         J-31 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td>0.37</td><td>0.11</td></td<>							0.37	0.11
P-30							0.08	0.01
P-31					0.01			0.03
P-32								
P-33         J-26         J-27         3.24         0.00         0.02         0.00           P-34         J-28         J-25         4.28         0.00         0.00         0.03         0.00           P-35         J-28         J-33         4.70         0.00         0.00         0.03         0.00           P-36         J-30         J-19         -46.86         0.02         0.00         0.29         0.07           P-37         J-29         J-34         -3.82         0.00         0.00         0.02         0.00           P-38         J-31         J-30         -13.96         0.00         0.00         0.09         0.01           P-39         J-29         J-31         -22.96         0.01         0.00         0.01         0.02           P-40         J-32         J-29         -22.60         0.00         0.00         0.01         0.02           P-41         J-32         J-37         1.13         0.00         0.00         0.01         0.01           P-42         J-34         J-30         -29.69         0.01         0.00         0.01         0.01           P-43         J-33         J-34         18.61							0.14	0.02
P-34         J-28         J-25         4.28         0.00         0.00         0.03         0.00           P-35         J-28         J-33         4.70         0.00         0.00         0.03         0.00           P-36         J-30         J-19         -46.86         0.02         0.00         0.29         0.07           P-37         J-29         J-34         -3.82         0.00         0.00         0.02         0.00           P-38         J-31         J-30         -13.96         0.00         0.00         0.09         0.01           P-39         J-29         J-31         -22.96         0.01         0.00         0.14         0.02           P-40         J-32         J-29         -22.60         0.00         0.00         0.14         0.02           P-41         J-32         J-37         1.13         0.00         0.00         0.01         0.00           P-42         J-34         J-30         -29.69         0.01         0.00         0.01         0.00           P-43         J-33         J-32         -16.61         0.00         0.00         0.10         0.00           P-44         J-33         J-41			J-28	13.84		0.00	0.09	0.01
P-35         J-28         J-33         4.70         0.00         0.03         0.00           P-36         J-30         J-19         -46.86         0.02         0.00         0.29         0.07           P-37         J-29         J-34         -3.82         0.00         0.00         0.02         0.00           P-38         J-31         J-30         -13.96         0.00         0.00         0.09         0.01           P-39         J-29         J-31         -22.96         0.01         0.00         0.14         0.02           P-40         J-32         J-29         -22.60         0.00         0.00         0.01         0.02           P-41         J-32         J-37         1.13         0.00         0.00         0.01         0.02           P-41         J-32         J-37         1.13         0.00         0.00         0.01         0.02           P-42         J-34         J-30         -29.69         0.01         0.00         0.01         0.02           P-43         J-33         J-32         -16.61         0.00         0.00         0.10         0.01           P-44         J-33         J-44         18.61					0.00	0.00	0.02	0.00
P-36         J-30         J-19         -46.86         0.02         0.00         0.29         0.07           P-37         J-29         J-34         -3.82         0.00         0.00         0.02         0.00           P-38         J-31         J-30         -13.96         0.00         0.00         0.09         0.07           P-39         J-29         J-31         -22.96         0.01         0.00         0.14         0.02           P-40         J-32         J-29         -22.60         0.00         0.00         0.01         0.02           P-41         J-32         J-37         1.13         0.00         0.00         0.01         0.02           P-41         J-32         J-37         1.13         0.00         0.00         0.01         0.00           P-42         J-34         J-30         -29.69         0.01         0.00         0.01         0.00           P-43         J-33         J-32         -16.61         0.00         0.00         0.10         0.00           P-44         J-33         J-44         18.61         0.00         0.00         0.01         0.00           P-45         J-35         J-41					0.00	0.00	0.03	0.00
P-37         J-29         J-34         -3.82         0.00         0.00         0.02         0.00           P-38         J-31         J-30         -13.96         0.00         0.00         0.09         0.01           P-39         J-29         J-31         -22.96         0.01         0.00         0.14         0.02           P-40         J-32         J-29         -22.60         0.00         0.00         0.14         0.02           P-41         J-32         J-37         1.13         0.00         0.00         0.01         0.00           P-42         J-34         J-30         -29.69         0.01         0.00         0.01         0.00           P-43         J-33         J-32         -16.61         0.00         0.00         0.19         0.01           P-44         J-33         J-44         18.61         0.00         0.00         0.12         0.01           P-45         J-35         J-41         4.54         0.00         0.00         0.00         0.00           P-46         J-36         J-35         0.72         0.00         0.00         0.00         0.00           P-47         J-36         J-39			J-33		0.00	0.00	0.03	0.00
P-38         J-31         J-30         -13.96         0.00         0.00         0.09         0.01           P-39         J-29         J-31         -22.96         0.01         0.00         0.14         0.02           P-40         J-32         J-29         -22.60         0.00         0.00         0.14         0.02           P-41         J-32         J-37         1.13         0.00         0.00         0.01         0.00           P-42         J-34         J-30         -29.69         0.01         0.00         0.01         0.00           P-43         J-33         J-32         -16.61         0.00         0.00         0.10         0.01           P-44         J-33         J-44         18.61         0.00         0.00         0.12         0.01           P-45         J-35         J-41         4.54         0.00         0.00         0.03         0.00           P-46         J-36         J-35         0.72         0.00         0.00         0.00         0.00           P-47         J-36         J-39         -11.92         0.00         0.00         0.01         0.00           P-48         J-37         J-38			J-19	-46.86	0.02	0.00	0.29	0.07
P-39				-3.82	0.00	0.00	0.02	0.00
P-40         J-32         J-29         -22.60         0.00         0.14         0.02           P-41         J-32         J-37         1.13         0.00         0.00         0.01         0.00           P-42         J-34         J-30         -29.69         0.01         0.00         0.19         0.00           P-43         J-33         J-32         -16.61         0.00         0.00         0.10         0.00           P-44         J-33         J-44         18.61         0.00         0.00         0.12         0.00           P-45         J-35         J-41         4.54         0.00 <td></td> <td>J-31</td> <td>J-30</td> <td>-13.96</td> <td>0.00</td> <td>0.00</td> <td>0.09</td> <td>0.01</td>		J-31	J-30	-13.96	0.00	0.00	0.09	0.01
P-41         J-32         J-37         1.13         0.00         0.00         0.01         0.00           P-42         J-34         J-30         -29.69         0.01         0.00         0.19         0.00           P-43         J-33         J-32         -16.61         0.00         0.00         0.10         0.00           P-44         J-33         J-44         18.61         0.00         0.00         0.12         0.01           P-45         J-35         J-41         4.54         0.00         0.00         0.03         0.06           P-46         J-36         J-35         0.72         0.00         0.00         0.00         0.00           P-47         J-36         J-39         -11.92         0.00         0.00         0.07         0.00           P-48         J-37         J-34         -23.71         0.01         0.00         0.15         0.00           P-49         J-38         J-37         -21.64         0.01         0.00         0.14         0.00           P-50         J-39         J-38         -17.32         0.00         0.00         0.01         0.00           P-51         J-40         J-36	P-39		J-31		0.01	. 0.00	0.14	0.02
P-41       J-32       J-37       1.13       0.00       0.00       0.01       0.00         P-42       J-34       J-30       -29.69       0.01       0.00       0.19       0.01         P-43       J-33       J-32       -16.61       0.00       0.00       0.10       0.01         P-44       J-33       J-44       18.61       0.00       0.00       0.12       0.01         P-45       J-35       J-41       4.54       0.00       0.00       0.03       0.00         P-46       J-36       J-35       0.72       0.00       0.00       0.00       0.00         P-47       J-36       J-39       -11.92       0.00       0.00       0.07       0.00         P-48       J-37       J-34       -23.71       0.01       0.00       0.15       0.00         P-49       J-38       J-37       -21.64       0.01       0.00       0.14       0.00         P-50       J-39       J-38       -17.32       0.00       0.00       0.01       0.00         P-51       J-40       J-36       -4.64       0.00       0.00       0.00       0.00         P-52       J-41	P-40	J-32		-22.60	0.00	0.00	0.14	0.02
P-42       J-34       J-30       -29.69       0.01       0.00       0.19       0.00         P-43       J-33       J-32       -16.61       0.00       0.00       0.10       0.00         P-44       J-33       J-44       18.61       0.00       0.00       0.12       0.00         P-45       J-35       J-41       4.54       0.00       0.00       0.03       0.00         P-46       J-36       J-35       0.72       0.00       0.00       0.00       0.00         P-47       J-36       J-39       -11.92       0.00       0.00       0.07       0.00         P-48       J-37       J-34       -23.71       0.01       0.00       0.15       0.00         P-49       J-38       J-37       -21.64       0.01       0.00       0.14       0.00         P-50       J-39       J-38       -17.32       0.00       0.00       0.01       0.00         P-51       J-40       J-36       -4.64       0.00       0.00       0.00       0.00         P-52       J-41       J-40       0.22       0.00       0.00       0.00       0.00	P-41	J-32	J-37	1.13	0.00	0.00	0.01	0.00
P-43         J-33         J-32         -16.61         0.00         0.00         0.10         0.00           P-44         J-33         J-44         18.61         0.00         0.00         0.12         0.00           P-45         J-35         J-41         4.54         0.00         0.00         0.03         0.06           P-46         J-36         J-35         0.72         0.00         0.00         0.00         0.00           P-47         J-36         J-39         -11.92         0.00         0.00         0.07         0.00           P-48         J-37         J-34         -23.71         0.01         0.00         0.15         0.00           P-49         J-38         J-37         -21.64         0.01         0.00         0.14         0.00           P-50         J-39         J-38         -17.32         0.00         0.00         0.11         0.0           P-51         J-40         J-36         -4.64         0.00         0.00         0.00         0.00           P-52         J-41         J-40         0.22         0.00         0.00         0.00         0.00	P-42	J-34	J-30	-29,69	0.01			0.03
P-44         J-33         J-44         18.61         0.00         0.00         0.12         0.01           P-45         J-35         J-41         4.54         0.00         0.00         0.00         0.00           P-46         J-36         J-35         0.72         0.00         0.00         0.00         0.00           P-47         J-36         J-39         -11.92         0.00         0.00         0.07         0.00           P-48         J-37         J-34         -23.71         0.01         0.00         0.15         0.00           P-49         J-38         J-37         -21.64         0.01         0.00         0.14         0.00           P-50         J-39         J-38         -17.32         0.00         0.00         0.11         0.00           P-51         J-40         J-36         -4.64         0.00         0.00         0.00         0.00           P-52         J-41         J-40         0.22         0.00         0.00         0.00         0.00	P-43	J-33	J-32					0.01
P-45         J-35         J-41         4.54         0.00         0.00         0.03         0.00           P-46         J-36         J-35         0.72         0.00         0.00         0.00         0.00           P-47         J-36         J-39         -11.92         0.00         0.00         0.07         0.00           P-48         J-37         J-34         -23.71         0.01         0.00         0.15         0.00           P-49         J-38         J-37         -21.64         0.01         0.00         0.14         0.00           P-50         J-39         J-38         -17.32         0.00         0.00         0.11         0.00           P-51         J-40         J-36         -4.64         0.00         0.00         0.03         0.00           P-52         J-41         J-40         0.22         0.00         0.00         0.00         0.00	P-44	J-33						_
P-46         J-36         J-35         0.72         0.00         0.00         0.00         0.00           P-47         J-36         J-39         -11.92         0.00         0.00         0.07         0.00           P-48         J-37         J-34         -23.71         0.01         0.00         0.15         0.00           P-49         J-38         J-37         -21.64         0.01         0.00         0.14         0.00           P-50         J-39         J-38         -17.32         0.00         0.00         0.11         0.00           P-51         J-40         J-36         -4.64         0.00         0.00         0.03         0.00           P-52         J-41         J-40         0.22         0.00         0.00         0.00         0.00	P-45							0.00
P-47     J-36     J-39     -11.92     0.00     0.00     0.07     0.00       P-48     J-37     J-34     -23.71     0.01     0.00     0.15     0.00       P-49     J-38     J-37     -21.64     0.01     0.00     0.14     0.00       P-50     J-39     J-38     -17.32     0.00     0.00     0.11     0.00       P-51     J-40     J-36     -4.64     0.00     0.00     0.03     0.00       P-52     J-41     J-40     0.22     0.00     0.00     0.00     0.00	·							
P-48 J-37 J-34 -23.71 0.01 0.00 0.15 0.00 P-49 J-38 J-37 -21.64 0.01 0.00 0.14 0.00 P-50 J-39 J-38 -17.32 0.00 0.00 0.11 0.00 P-51 J-40 J-36 -4.64 0.00 0.00 0.03 0.00 P-52 J-41 J-40 0.22 0.00 0.00 0.00 0.00								
P-49 J-38 J-37 -21.64 0.01 0.00 0.14 0.00 P-50 J-39 J-38 -17.32 0.00 0.00 0.11 0.00 P-51 J-40 J-36 -4.64 0.00 0.00 0.03 0.00 P-52 J-41 J-40 0.22 0.00 0.00 0.00 0.00								
P-50 J-39 J-38 -17.32 0.00 0.00 0.11 0.00 P-51 J-40 J-36 -4.64 0.00 0.00 0.03 0.00 P-52 J-41 J-40 0.22 0.00 0.00 0.00 0.00								
P-51 J-40 J-36 -4.64 0.00 0.00 0.03 0.00 P-52 J-41 J-40 0.22 0.00 0.00 0.00 0.00								
P-52 J-41 J-40 0.22 0.00 0.00 0.00 0.0								
	a to the second							
	P-53	J-42	J-40 J-35	8.75	0.00	0.00	0.00	0.00
	and the second s	and the second second		4			4	

P-54	J-43	J-42	13.25	0.00	0.00	0.08	0.01
P-55	J-44	J-43	17.57				
P-56	J- 5	R- 1				1.32	

#### NODE RESULTS

NODE NAME TITLE DEMAND GRADE ELEVATION HEAD (gpm) (ft) (ft) (ft) (ft) (ft) (ft) (ft) (ft	•								
NAME TITLE DEMAND (grm) GRADE (ft) (ft) (ft) (ft)  J- 1	*	NODE		NODE	EXTERNAL	HYDRAULIC	NODE	PRESSURE	NODE
Gpm  (ft) (ft) (ft) (ft) (ft)   Gpm    Gpm  (ft) (ft) (ft) (ft)   Gpm    Gpm									PRESSURE
J- 1         0.00         1644.89         1541.30         103.59           J- 2         10.80(0.54)1644.85         1540.80         104.05           J- 3         5.40(0.54)1644.85         1540.80         104.05           J- 4         4.32(0.54)1644.85         1538.00         106.85           J- 5         0.00         1644.98         1537.30         107.16           J- 6         6.96(0.61)1644.80         1537.30         107.50           J- 7         4.86(0.54)1644.77         1541.10         103.67           J- 8         4.32(0.54)1644.87         1542.70         102.17           J- 9         4.28(0.61)1644.67         1542.90         101.77           J-10         7.46(0.65)1644.72         1539.10         105.62           J-11         3.24(0.54)1644.67         1542.90         100.82           J-13         4.86(0.54)1644.67         1543.90         100.88           J-13         4.86(0.54)1644.67         1534.90         100.88           J-14         7.02(0.54)1644.64         1537.80         106.84           J-15         8.00(0.64)1644.64         1537.80         106.84           J-16         10.80(0.54)1644.64         1538.20         106.41           <		*******							(psi)
J- 2         10.80(0.54)1644.85         1540.80         104.05           J- 3         5.40(0.54)1644.85         1530.00         104.05           J- 4         4.32(0.54)1644.85         1538.00         106.85           J- 5         0.00         1644.98         1543.80         101.18           J- 6         6.96(0.61)1644.80         1537.30         107.50           J- 7         4.86(0.54)1644.77         1541.10         103.67           J- 8         4.32(0.54)1644.87         1542.70         102.17           J- 9         4.28(0.61)1644.67         1542.90         101.77           J-10         7.46(0.65)1644.72         1539.10         105.62           J-11         3.24(0.54)1644.67         1542.90         100.82           J-13         4.86(0.65)1644.72         1543.90         100.82           J-13         4.86(0.54)1644.67         1538.10         106.57           J-14         7.02(0.54)1644.64         1537.80         106.84           J-15         8.00(0.64)1644.64         1538.20         106.41           J-18         9.72(0.54)1644.61         1538.20         106.41           J-18         9.72(0.54)1644.59         1537.40         107.15           J-18					(9£m)	(10)	(10)	(10)	(bsr)
J- 2         10.80(0.54)1644.85         1540.80         104.05           J- 3         5.40(0.54)1644.85         1530.00         104.05           J- 4         4.32(0.54)1644.85         1538.00         106.85           J- 5         0.00         1644.98         1543.80         101.18           J- 6         6.96(0.61)1644.80         1537.30         107.50           J- 7         4.86(0.54)1644.77         1541.10         103.67           J- 8         4.32(0.54)1644.87         1542.70         102.17           J- 9         4.28(0.61)1644.67         1542.90         101.77           J-10         7.46(0.65)1644.72         1539.10         105.62           J-11         3.24(0.54)1644.67         1542.90         100.82           J-13         4.86(0.65)1644.72         1543.90         100.82           J-13         4.86(0.54)1644.67         1538.10         106.57           J-14         7.02(0.54)1644.64         1537.80         106.84           J-15         8.00(0.64)1644.64         1538.20         106.41           J-18         9.72(0.54)1644.61         1538.20         106.41           J-18         9.72(0.54)1644.59         1537.40         107.15           J-18		J- 1			. 0.00	1644 89	1541.30	103.59	44.89
J- 3         5.40(0.54)1644.80         1540.80         104.00           J- 5         0.00         1644.85         1538.00         101.18           J- 6         6.96(0.61)1644.80         1537.30         107.50           J- 7         4.86(0.54)1644.87         1542.70         102.17           J- 8         4.32(0.54)1644.67         1542.90         101.77           J- 9         4.28(0.61)1644.67         1542.90         101.77           J-10         7.46(0.65)1664.72         1539.10         100.62           J-11         3.24(0.54)1644.72         1539.10         100.62           J-13         4.86(0.54)1644.67         1538.10         100.65           J-13         4.86(0.54)1644.67         1538.10         100.88           J-13         4.86(0.54)1644.67         1538.10         106.57           J-14         7.02(0.54)1644.61         1538.20         100.88           J-15         8.00(0.64)1644.61         1538.00         108.64           J-16         10.80(0.54)1644.61         1538.20         106.57           J-18         9.72(0.54)1644.59         1537.40         107.19           J-20         4.32(0.54)1644.59         1537.40         107.19           J-21									45.09
J- 4       4.32(0.54)1644.85       1538.00       106.85         J- 5       0.00       1644.98       1543.80       101.18         J- 6       6.96(0.61)1644.80       1537.30       107.50         J- 7       4.86(0.54)1644.77       1541.10       103.67         J- 8       4.32(0.54)1644.87       1542.90       101.77         J- 9       4.28(0.61)1644.67       1542.90       101.77         J-10       7.46(0.65)1644.72       1539.10       105.62         J-11       3.24(0.54)1644.72       1543.90       100.82         J-12       5.36(0.60)1644.78       1543.90       100.82         J-13       4.86(0.54)1644.67       1538.10       106.57         J-14       7.02(0.54)1644.64       1537.80       106.84         J-15       8.00(0.64)1644.64       1536.00       108.64         J-16       10.80(0.54)1644.61       1538.10       106.51         J-18       9.72(0.54)1644.59       1537.40       107.19         J-19       4.32(0.54)1644.59       1539.90       104.69         J-20       4.32(0.54)1644.59       1536.30       108.29         J-21       4.32(0.54)1644.59       1536.20       108.37         J-22									45.07
J-5 J-6 G.96(0.61)1644.98 J543.80 J07.50 J-7 J-8 J-8 J-8 J-9 J-9 J-10 J-10 J-10 J-11 J-11 J-12 J-12 J-13 J-14 J-15 J-15 J-15 J-16 J-16 J-16 J-16 J-17 J-10 J-18 J-18 J-19 J-19 J-19 J-10 J-10 J-10 J-10 J-10 J-10 J-10 J-10									46.30
J- 6         6.96(0.61)1644.80         1537.30         107.50           J- 7         4.86(0.54)1644.77         1541.10         103.67           J- 8         4.32(0.54)1644.87         1542.70         102.17           J- 9         4.28(0.61)1644.67         1542.90         101.77           J-10         7.46(0.65)1644.72         1539.10         105.62           J-11         3.24(0.54)1644.72         1543.90         100.82           J-12         5.36(0.60)1644.78         1543.90         100.82           J-13         4.86(0.54)1644.67         1538.10         106.57           J-14         7.02(0.54)1644.64         1537.80         106.84           J-15         8.00(0.64)1644.64         1537.80         106.84           J-16         10.80(0.54)1644.61         1538.20         106.41           J-17         6.48(0.54)1644.61         1538.20         106.41           J-18         9.72(0.54)1644.59         1537.40         107.19           J-19         4.32(0.54)1644.59         1537.40         107.19           J-20         4.32(0.54)1644.59         1537.40         107.19           J-21         4.32(0.54)1644.59         1537.40         107.19           J-22				1			,		
J- 7       4.86(0.54)1644.77       1541.10       103.67         J- 8       4.32(0.54)1644.87       1542.70       102.17         J- 9       4.28(0.61)1644.67       1542.90       101.77         J-10       7.46(0.65)1644.72       1539.10       105.62         J-11       3.24(0.54)1644.72       1539.10       100.82         J-12       5.36(0.60)1644.72       1543.90       100.88         J-13       4.86(0.54)1644.67       1538.10       106.57         J-14       7.02(0.54)1644.64       1537.80       106.84         J-15       8.00(0.64)1644.64       1538.20       106.41         J-16       10.80(0.54)1644.61       1538.20       106.41         J-17       6.48(0.54)1644.61       1538.10       106.51         J-18       9.72(0.54)1644.59       1537.40       107.19         J-19       4.32(0.54)1644.59       1537.40       107.19         J-20       4.32(0.54)1644.59       1536.30       108.29         J-21       4.32(0.54)1644.59       1536.30       108.29         J-23       4.32(0.54)1644.56       1537.00       107.56         J-24       4.28(0.61)1644.56       1537.00       107.56         J-25       4.28(				*					43.85
J- 8       4.32(0.54)1644.87       1542.70       102.17         J- 9       4.28(0.61)1644.67       1542.90       101.77         J-10       7.46(0.65)1644.72       1539.10       105.62         J-11       3.24(0.54)1644.72       1543.90       100.82         J-12       5.36(0.60)1644.78       1543.90       100.82         J-13       4.86(0.54)1644.64       1537.80       106.57         J-14       7.02(0.54)1644.64       1537.80       106.84         J-15       8.00(0.64)1644.64       1538.00       108.64         J-16       10.80(0.54)1644.61       1538.20       106.51         J-17       6.48(0.54)1644.61       1538.10       106.51         J-18       9.72(0.54)1644.59       1537.40       107.19         J-19       4.32(0.54)1644.59       1539.90       104.69         J-20       4.32(0.54)1644.59       1539.90       104.69         J-21       4.32(0.54)1644.59       1536.30       108.29         J-21       4.32(0.54)1644.56       1537.00       107.56         J-22       2.02(0.70)1644.56       1537.00       107.56         J-23       4.28(0.61)1644.56       1535.00       108.95         J-24       4.28(					•				46.58
J-9 4.28(0.61)1644.67 1542.90 101.77 J-10 7.46(0.65)1644.72 1539.10 105.62 J-11 3.24(0.54)1644.72 1543.90 100.82 J-12 5.36(0.60)1644.78 1543.90 100.88 J-13 4.86(0.54)1644.67 1538.10 106.57 J-14 7.02(0.54)1644.64 1537.80 106.84 J-15 8.00(0.64)1644.64 1536.00 108.64 J-16 10.80(0.54)1644.61 1538.20 106.41 J-17 6.48(0.54)1644.51 1538.20 106.41 J-18 9.72(0.54)1644.59 1537.40 107.19 J-19 4.32(0.54)1644.59 1539.90 104.69 J-20 4.32(0.54)1644.59 1539.90 104.69 J-21 4.32(0.54)1644.59 1536.30 108.29 J-21 4.32(0.54)1644.57 1536.20 108.37 J-22 2.02(0.70)1644.57 1536.20 108.37 J-23 4.28(0.61)1644.55 1535.60 108.95 J-26 5.22(0.66)1644.55 1535.50 109.46 J-27 3.24(0.54)1644.55 1535.50 109.46 J-27 3.24(0.54)1644.55 1535.50 109.45 J-29 4.18(0.61)1644.55 1535.50 109.55 J-28 4.86(0.54)1644.55 1535.50 109.55 J-30 3.20(0.64)1644.55 1535.50 109.55 J-31 4.32(0.54)1644.55 1535.50 109.55 J-32 4.86(0.54)1644.55 1535.50 109.55 J-33 3.20(0.64)1644.55 1536.90 107.65 J-34 4.26(0.54)1644.55 1536.90 107.65 J-35 4.92(0.66)1644.55 1538.90 105.66 J-35 4.92(0.66)1644.55 1538.90 105.66 J-35 4.92(0.64)1644.55 1538.90 105.66 J-35 4.92(0.64)1644.55 1538.90 105.66 J-35 4.92(0.64)1644.55 1538.90 105.66 J-36 (0.54)1644.55 1538.90 105.66 J-37 3.20(0.64)1644.55 1538.90 105.66 J-38 4.92(0.64)1644.55 1539.90 104.67 J-39 5.40(0.54)1644.55 1539.90 105.64 J-39 5.40(0.54)1644.55 1539.90 105.04 J-39 5.40(0.54)1644.55 1539.90 105.04 J-30 4.86(0.54)1644.55 1538.90 105.66 J-35 4.92(0.66)1644.55 1539.90 105.04 J-36 6.56(0.57)1644.54 1539.90 105.04 J-37 3.20(0.64)1644.55 1539.90 105.04 J-38 4.32(0.54)1644.54 1539.90 105.04 J-39 5.40(0.54)1644.55 1539.90 105.04 J-30 4.86(0.54)1644.55 1539.90 105.04 J-31 4.32(0.54)1644.54 1539.90 105.04 J-32 4.86(0.54)1644.55 1538.80 106.94 J-34 4.92(0.61)1644.54 1539.90 105.04 J-34 4.92(0.61)1644.55 1538.80 106.94 J-34 4.92(0.61)1644.55 1538.80 106.94 J-34 4.92(0.64)1644.55 1539.90 105.04							•		44.92
J-10 J-11 J.24 (0.54) 1644.72 J.53.90 J12 J.713 J.60 (0.60) 1644.78 J.713 J.714 J.7.02 (0.54) 1644.64 J.715 J.714 J.7.02 (0.54) 1644.64 J.715 B.00 (0.64) 1644.64 J.715 B.00 (0.64) 1644.64 J.717 B.00 (0.54) 1644.64 J.717 B.00 (0.54) 1644.64 J.718 J.718 J.719 J.720 J.720 J.720 J.721 J.721 J.721 J.721 J.722 J.721 J.722 J.721 J.722 J.722 J.721 J.722 J.722 J.722 J.722 J.723 J.723 J.723 J.723 J.723 J.724 J.725 J.724 J.726 J.726 J.726 J.727 J.727 J.726 J.727 J.728 J.728 J.728 J.729 J.729 J.729 J.720 J.72									44.27
J-11 J-12 J-13 J-14 J-13 J-14 J-15 J-14 J-15 J-14 J-15 J-16 J-16 J-16 J-16 J-17 J-17 J-18 J-17 J-18 J-19 J-19 J-19 J-19 J-19 J-19 J-19 J-19			•						44.10
J-12       5.36(0.60)1644.78       1543.90       100.88         J-13       4.86(0.54)1644.67       1538.10       106.57         J-15       8.00(0.64)1644.64       1537.80       106.84         J-16       10.80(0.54)1644.61       1538.20       106.41         J-17       6.48(0.54)1644.51       1538.10       106.51         J-18       9.72(0.54)1644.59       1537.40       107.19         J-19       4.32(0.54)1644.59       1539.90       104.69         J-20       4.32(0.54)1644.59       1536.30       108.29         J-21       4.32(0.54)1644.59       1536.30       108.29         J-21       4.32(0.54)1644.56       1536.20       108.37         J-22       2.02(0.70)1644.57       1536.20       108.37         J-23       4.32(0.54)1644.56       1537.00       107.56         J-24       4.28(0.61)1644.56       1537.00       107.56         J-25       4.28(0.61)1644.55       1535.10       109.46         J-27       3.24(0.54)1644.55       1535.10       109.46         J-29       4.18(0.61)1644.55       1535.50       109.06         J-30       3.20(0.64)1644.55       1537.70       106.87         J-31       4.32(					• • • • • • • • • • • • • • • • • • • •	•			45.77
J-13       4.86(0.54)1644.67       1538.10       106.57         J-14       7.02(0.54)1644.64       1537.80       106.84         J-15       8.00(0.64)1644.64       1536.00       108.64         J-16       10.80(0.54)1644.61       1538.20       106.41         J-17       6.48(0.54)1644.59       1537.40       107.19         J-18       9.72(0.54)1644.59       1537.40       107.19         J-19       4.32(0.54)1644.59       1536.30       108.29         J-20       4.32(0.54)1644.59       1536.30       108.29         J-21       4.32(0.54)1644.55       1536.20       108.37         J-23       4.32(0.54)1644.56       1537.00       107.56         J-24       4.28(0.61)1644.56       1537.00       107.56         J-24       4.28(0.61)1644.56       1535.30       108.26         J-25       4.28(0.61)1644.56       1535.50       108.95         J-26       5.22(0.66)1644.56       1535.10       109.46         J-27       3.24(0.54)1644.55       1535.50       109.66         J-30       3.20(0.64)1644.55       1535.50       109.06         J-31       4.32(0.54)1644.57       1537.70       106.87         J-33       2.76(									43.69
J-14       7.02(0.54)1644.64       1537.80       106.84         J-15       8.00(0.64)1644.64       1536.00       108.64         J-16       10.80(0.54)1644.61       1538.20       106.41         J-17       6.48(0.54)1644.61       1538.10       106.51         J-18       9.72(0.54)1644.59       1537.40       107.19         J-19       4.32(0.54)1644.59       1539.90       104.69         J-20       4.32(0.54)1644.59       1539.90       104.69         J-21       4.32(0.54)1644.62       1540.90       103.72         J-22       2.02(0.70)1644.57       1536.20       108.37         J-23       4.32(0.54)1644.56       1537.00       107.56         J-24       4.28(0.61)1644.56       1537.00       107.56         J-25       4.28(0.61)1644.56       1535.60       108.95         J-26       5.22(0.66)1644.56       1535.10       109.46         J-27       3.24(0.54)1644.55       1535.00       109.55         J-28       4.86(0.54)1644.55       1535.50       109.06         J-30       3.20(0.64)1644.55       1537.70       106.87         J-31       4.32(0.54)1644.55       1537.30       107.25         J-33       2.76(	•.								43.71
J-15       8.00 (0.64) 1644.64       1536.00       108.64         J-16       10.80 (0.54) 1644.61       1538.20       106.41         J-17       6.48 (0.54) 1644.61       1538.10       106.51         J-18       9.72 (0.54) 1644.59       1537.40       107.19         J-19       4.32 (0.54) 1644.59       1539.90       104.69         J-20       4.32 (0.54) 1644.59       1536.30       108.29         J-21       4.32 (0.54) 1644.57       1536.20       108.37         J-22       2.02 (0.70) 1644.57       1536.20       108.37         J-23       4.32 (0.54) 1644.56       1537.00       107.56         J-24       4.28 (0.61) 1644.56       1536.30       108.26         J-25       4.28 (0.61) 1644.56       1535.50       109.46         J-27       3.24 (0.54) 1644.55       1535.10       109.46         J-28       4.86 (0.54) 1644.55       1535.50       109.55         J-28       4.86 (0.54) 1644.55       1535.50       109.06         J-30       3.24 (0.54) 1644.55       1537.70       106.87         J-31       4.32 (0.54) 1644.57       1539.90       104.67         J-33       2.70 (0.54) 1644.55       1536.90       107.65						•			46.18
J-16 J-17 6.48(0.54)1644.61 J-17 6.48(0.54)1644.51 J-18 9.72(0.54)1644.59 J-19 4.32(0.54)1644.59 J-20 4.32(0.54)1644.59 J-21 4.32(0.54)1644.59 J-22 J-21 4.32(0.54)1644.57 J-33 J-23 4.32(0.54)1644.56 J-25 J-26 J-26 J-27 J-28 J-27 J-28 J-28 J-28 J-29 J-29 J-20 J-20 J-20 J-20 J-20 J-20 J-20 J-20									46.30
J-17       6.48 (0.54) 1644.61       1538.10       106.51         J-18       9.72 (0.54) 1644.59       1537.40       107.19         J-19       4.32 (0.54) 1644.59       1539.90       104.69         J-20       4.32 (0.54) 1644.59       1536.30       108.29         J-21       4.32 (0.54) 1644.57       1536.20       108.37         J-22       2.02 (0.70) 1644.57       1536.20       108.37         J-23       4.32 (0.54) 1644.56       1537.00       107.56         J-24       4.28 (0.61) 1644.56       1536.30       108.26         J-25       4.28 (0.61) 1644.55       1535.60       108.95         J-26       5.22 (0.66) 1644.56       1535.10       109.46         J-27       3.24 (0.54) 1644.55       1535.00       109.55         J-28       4.86 (0.54) 1644.55       1535.50       109.06         J-30       3.20 (0.64) 1644.55       1535.50       109.06         J-31       4.32 (0.54) 1644.57       1537.70       106.87         J-33       2.00 (0.64) 1644.57       1537.70       106.87         J-34       4.32 (0.54) 1644.55       1536.90       107.65         J-34       2.16 (0.54) 1644.54       1538.90       107.65	•						1536.00	108.64	47.08
J-18 J-19 J-19 J-20 J-20 J-21 J-21 J-22 J-21 J-22 J-22 J-23 J-23 J-24 J-26 J-26 J-26 J-26 J-27 J-27 J-28 J-28 J-29 J-30 J-30 J-30 J-30 J-30 J-30 J-30 J-30									46.11
J-19       4.32(0.54)1644.59       1539.90       104.69         J-20       4.32(0.54)1644.59       1536.30       108.29         J-21       4.32(0.54)1644.62       1540.90       103.72         J-22       2.02(0.70)1644.57       1536.20       108.37         J-23       4.32(0.54)1644.56       1537.00       107.56         J-24       4.28(0.61)1644.56       1536.30       108.26         J-25       4.28(0.61)1644.55       1535.60       108.95         J-26       5.22(0.66)1644.56       1535.10       109.46         J-27       3.24(0.54)1644.55       1535.00       109.55         J-28       4.86(0.54)1644.55       1535.50       109.06         J-30       3.20(0.64)1644.55       1535.50       109.06         J-30       3.20(0.64)1644.57       1539.90       104.67         J-31       4.32(0.54)1644.57       1537.70       106.87         J-32       4.86(0.54)1644.55       1537.30       107.25         J-33       2.70(0.54)1644.55       1536.90       107.65         J-34       2.16(0.54)1644.55       1538.90       105.66         J-35       4.92(0.61)1644.54       1538.90       105.66         J-38       4.32(0							1538.10	106.51	46.15
J-20       4.32(0.54)1644.59       1536.30       108.29         J-21       4.32(0.54)1644.62       1540.90       103.72         J-22       2.02(0.70)1644.57       1536.20       108.37         J-23       4.32(0.54)1644.56       1537.00       107.56         J-24       4.28(0.61)1644.56       1536.30       108.26         J-25       4.28(0.61)1644.55       1535.60       108.95         J-26       5.22(0.66)1644.56       1535.10       109.46         J-27       3.24(0.54)1644.55       1535.00       109.55         J-28       4.86(0.54)1644.55       1535.50       109.06         J-30       3.20(0.64)1644.56       1535.50       109.06         J-30       3.20(0.64)1644.57       1539.90       104.67         J-31       4.32(0.54)1644.57       1537.70       106.87         J-32       4.86(0.54)1644.55       1537.30       107.25         J-33       2.70(0.54)1644.55       1538.90       105.66         J-34       2.16(0.54)1644.55       1538.90       105.66         J-35       4.92(0.61)1644.54       1538.40       106.14         J-37       3.20(0.64)1644.54       1539.60       104.95         J-38       4.32(0				•	9.72(0.	54)1644.59	1537.40	107.19	46.45
J-21       4.32(0.54)1644.62       1540.90       103.72         J-22       2.02(0.70)1644.57       1536.20       108.37         J-23       4.32(0.54)1644.56       1537.00       107.56         J-24       4.28(0.61)1644.56       1536.30       108.26         J-25       4.28(0.61)1644.55       1535.60       108.95         J-26       5.22(0.66)1644.56       1535.10       109.46         J-27       3.24(0.54)1644.55       1535.00       109.55         J-28       4.86(0.54)1644.55       1535.50       109.55         J-29       4.18(0.61)1644.55       1535.50       109.06         J-30       3.20(0.64)1644.56       1535.50       109.06         J-31       4.32(0.54)1644.57       1539.90       104.67         J-32       4.86(0.54)1644.57       1537.70       106.87         J-33       2.70(0.54)1644.55       1536.90       107.65         J-34       2.16(0.54)1644.55       1538.90       105.66         J-35       4.92(0.61)1644.54       1538.90       105.66         J-37       3.20(0.64)1644.54       1539.90       104.95         J-38       4.32(0.54)1644.54       1539.90       105.04         J-40       4.86(0			٠.		4.32(0.	54)1644.59	1539.90	104.69	45.36
J-22       2.02(0.70)1644.57       1536.20       108.37         J-23       4.32(0.54)1644.56       1537.00       107.56         J-24       4.28(0.61)1644.56       1536.30       108.26         J-25       4.28(0.61)1644.55       1535.60       108.95         J-26       5.22(0.66)1644.55       1535.10       109.46         J-27       3.24(0.54)1644.55       1535.00       109.55         J-28       4.86(0.54)1644.55       1536.10       108.45         J-29       4.18(0.61)1644.56       1535.50       109.06         J-30       3.20(0.64)1644.57       1539.90       104.67         J-31       4.32(0.54)1644.57       1537.30       107.25         J-32       4.86(0.54)1644.55       1537.30       107.25         J-33       2.70(0.54)1644.55       1536.90       107.65         J-34       2.16(0.54)1644.55       1538.90       105.66         J-35       4.92(0.61)1644.54       1538.40       106.14         J-37       3.20(0.64)1644.54       1538.40       106.14         J-37       3.20(0.64)1644.54       1539.50       105.04         J-40       4.86(0.54)1644.54       1539.50       105.04         J-40       4.86(0					4.32(0.	54)1644.59	1536.30	108.29	46.92
J-23       4.32(0.54)1644.56       1537.00       107.56         J-24       4.28(0.61)1644.56       1536.30       108.26         J-25       4.28(0.61)1644.55       1535.60       108.95         J-26       5.22(0.66)1644.56       1535.10       109.46         J-27       3.24(0.54)1644.55       1535.00       109.55         J-28       4.86(0.54)1644.55       1535.50       109.06         J-30       3.20(0.64)1644.57       1539.90       104.67         J-31       4.32(0.54)1644.57       1537.30       107.25         J-32       4.86(0.54)1644.55       1537.30       107.25         J-33       2.70(0.54)1644.55       1536.90       107.65         J-34       2.16(0.54)1644.55       1538.90       105.66         J-35       4.92(0.61)1644.54       1538.40       106.14         J-36       6.56(0.57)1644.54       1538.40       106.14         J-37       3.20(0.64)1644.55       1539.60       104.95         J-38       4.32(0.54)1644.54       1539.50       105.04         J-40       4.86(0.54)1644.54       1539.50       105.04         J-40       4.96(0.54)1644.54       1539.30       105.24         J-41       4.32(0					4.32(0.	54)1644.62	1540.90	103.72	44.94
J-24       4.28(0.61)1644.56       1536.30       108.26         J-25       4.28(0.61)1644.55       1535.60       108.95         J-26       5.22(0.66)1644.56       1535.10       109.46         J-27       3.24(0.54)1644.55       1535.00       109.55         J-28       4.86(0.54)1644.55       1535.50       109.06         J-30       3.20(0.61)1644.56       1535.50       109.06         J-31       4.32(0.54)1644.57       1539.90       104.67         J-31       4.32(0.54)1644.57       1537.70       106.87         J-32       4.86(0.54)1644.55       1537.30       107.25         J-33       2.70(0.54)1644.55       1536.90       107.65         J-34       2.16(0.54)1644.55       1538.90       105.66         J-35       4.92(0.61)1644.54       1538.40       106.14         J-36       6.56(0.57)1644.54       1538.40       106.14         J-37       3.20(0.64)1644.55       1539.60       104.95         J-38       4.32(0.54)1644.54       1540.40       104.14         J-39       5.40(0.54)1644.54       1539.50       105.04         J-40       4.86(0.54)1644.54       1539.30       105.24         J-41       4.32(0		J-22			2.02(0.	70)1644.57	1536.20	108.37	46.96
J-25       4.28(0.61)1644.55       1535.60       108.95         J-26       5.22(0.66)1644.56       1535.10       109.46         J-27       3.24(0.54)1644.55       1535.00       109.55         J-28       4.86(0.54)1644.55       1535.50       109.06         J-29       4.18(0.61)1644.56       1535.50       109.06         J-30       3.20(0.64)1644.57       1539.90       104.67         J-31       4.32(0.54)1644.57       1537.70       106.87         J-32       4.86(0.54)1644.55       1537.30       107.25         J-33       2.70(0.54)1644.55       1536.90       107.65         J-34       2.16(0.54)1644.55       1538.90       105.66         J-35       4.92(0.61)1644.54       1536.70       107.84         J-36       6.56(0.57)1644.54       1538.40       106.14         J-37       3.20(0.64)1644.54       1539.60       104.95         J-38       4.32(0.54)1644.54       1539.50       105.04         J-40       4.86(0.54)1644.54       1539.30       105.24         J-41       4.32(0.54)1644.54       1538.50       106.04         J-42       4.51(0.59)1644.54       1538.50       106.54         J-43       4.32(0		J-23			4.32(0.	54)1644.56	1537.00	107.56	46.61
J-26       5.22(0.66)1644.56       1535.10       109.46         J-27       3.24(0.54)1644.55       1535.00       109.55         J-28       4.86(0.54)1644.55       1536.10       108.45         J-29       4.18(0.61)1644.56       1535.50       109.06         J-30       3.20(0.64)1644.57       1539.90       104.67         J-31       4.32(0.54)1644.57       1537.70       106.87         J-32       4.86(0.54)1644.55       1537.30       107.25         J-33       2.70(0.54)1644.55       1536.90       107.65         J-34       2.16(0.54)1644.55       1538.90       105.66         J-35       4.92(0.61)1644.54       1536.70       107.84         J-36       6.56(0.57)1644.54       1538.40       106.14         J-37       3.20(0.64)1644.54       1539.60       104.95         J-38       4.32(0.54)1644.54       1539.50       105.04         J-40       4.86(0.54)1644.54       1539.30       105.24         J-41       4.32(0.54)1644.54       1539.30       105.24         J-42       4.51(0.59)1644.54       1538.50       106.04         J-42       4.51(0.59)1644.54       1538.00       106.54         J-43       4.32(0		J-24			4.28(0.	61)1644.56	1536.30	108.26	46.91
J-27       3.24(0.54)1644.55       1535.00       109.55         J-28       4.86(0.54)1644.55       1536.10       108.45         J-29       4.18(0.61)1644.56       1535.50       109.06         J-30       3.20(0.64)1644.57       1539.90       104.67         J-31       4.32(0.54)1644.57       1537.70       106.87         J-32       4.86(0.54)1644.55       1537.30       107.25         J-33       2.70(0.54)1644.55       1536.90       107.65         J-34       2.16(0.54)1644.56       1538.90       105.66         J-35       4.92(0.61)1644.54       1536.70       107.84         J-36       6.56(0.57)1644.54       1538.40       106.14         J-37       3.20(0.64)1644.55       1539.60       104.95         J-38       4.32(0.54)1644.54       1539.50       105.04         J-40       4.86(0.54)1644.54       1539.50       105.04         J-40       4.86(0.54)1644.54       1538.50       106.04         J-42       4.51(0.59)1644.54       1537.20       107.34         J-43       4.32(0.54)1644.54       1538.00       106.54         J-44       1.04(1.04)1644.55       1538.60       105.95							1535.60	108.95	47.21
J-27       3.24(0.54)1644.55       1535.00       109.55         J-28       4.86(0.54)1644.55       1536.10       108.45         J-29       4.18(0.61)1644.56       1535.50       109.06         J-30       3.20(0.64)1644.57       1539.90       104.67         J-31       4.32(0.54)1644.57       1537.70       106.87         J-32       4.86(0.54)1644.55       1537.30       107.25         J-33       2.70(0.54)1644.55       1536.90       107.65         J-34       2.16(0.54)1644.56       1538.90       105.66         J-35       4.92(0.61)1644.54       1536.70       107.84         J-36       6.56(0.57)1644.54       1538.40       106.14         J-37       3.20(0.64)1644.55       1539.60       104.95         J-38       4.32(0.54)1644.54       1540.40       104.14         J-39       5.40(0.54)1644.54       1539.50       105.04         J-40       4.86(0.54)1644.54       1539.30       105.24         J-41       4.32(0.54)1644.54       1538.50       106.04         J-42       4.51(0.59)1644.54       1538.50       106.54         J-43       4.32(0.54)1644.54       1538.00       106.54         J-44       1.04(1	•	J-26			5,22(0.	66) 1644.56	1535.10	109.46	47.43
J-29       4.18(0.61)1644.56       1535.50       109.06         J-30       3.20(0.64)1644.57       1539.90       104.67         J-31       4.32(0.54)1644.57       1537.70       106.87         J-32       4.86(0.54)1644.55       1537.30       107.25         J-33       2.70(0.54)1644.55       1536.90       107.65         J-34       2.16(0.54)1644.56       1538.90       105.66         J-35       4.92(0.61)1644.54       1536.70       107.84         J-36       6.56(0.57)1644.54       1538.40       106.14         J-37       3.20(0.64)1644.55       1539.60       104.95         J-38       4.32(0.54)1644.54       1539.50       105.04         J-40       4.86(0.54)1644.54       1539.50       105.04         J-41       4.32(0.54)1644.54       1538.50       106.04         J-42       4.51(0.59)1644.54       1537.20       107.34         J-43       4.32(0.54)1644.54       1538.00       106.54         J-44       1.04(1.04)1644.55       1538.60       105.95		J-27					1535.00	109.55	47.47
J-30       3.20(0.64)1644.57       1539.90       104.67         J-31       4.32(0.54)1644.57       1537.70       106.87         J-32       4.86(0.54)1644.55       1537.30       107.25         J-33       2.70(0.54)1644.55       1536.90       107.65         J-34       2.16(0.54)1644.56       1538.90       105.66         J-35       4.92(0.61)1644.54       1536.70       107.84         J-36       6.56(0.57)1644.54       1538.40       106.14         J-37       3.20(0.64)1644.55       1539.60       104.95         J-38       4.32(0.54)1644.54       1539.50       105.04         J-40       4.86(0.54)1644.54       1539.50       105.04         J-40       4.86(0.54)1644.54       1539.30       105.24         J-41       4.32(0.54)1644.54       1538.50       106.04         J-42       4.51(0.59)1644.54       1537.20       107.34         J-43       4.32(0.54)1644.54       1538.00       106.54         J-44       1.04(1.04)1644.55       1538.60       105.95		J-28			4.86(0.	54)1644.55	1536.10	108.45	47.00
J-30       3.20(0.64)1644.57       1539.90       104.67         J-31       4.32(0.54)1644.57       1537.70       106.87         J-32       4.86(0.54)1644.55       1537.30       107.25         J-33       2.70(0.54)1644.55       1536.90       107.65         J-34       2.16(0.54)1644.56       1538.90       105.66         J-35       4.92(0.61)1644.54       1536.70       107.84         J-36       6.56(0.57)1644.54       1538.40       106.14         J-37       3.20(0.64)1644.55       1539.60       104.95         J-38       4.32(0.54)1644.54       1539.50       105.04         J-40       4.86(0.54)1644.54       1539.50       105.04         J-40       4.86(0.54)1644.54       1538.50       106.04         J-42       4.51(0.59)1644.54       1537.20       107.34         J-43       4.32(0.54)1644.54       1538.00       106.54         J-44       1.04(1.04)1644.55       1538.60       105.95		J-29			4.18(0.	61)1644.56	1535.50	109.06	47.26
J-31       4.32(0.54)1644.57       1537.70       106.87         J-32       4.86(0.54)1644.55       1537.30       107.25         J-33       2.70(0.54)1644.55       1536.90       107.65         J-34       2.16(0.54)1644.56       1538.90       105.66         J-35       4.92(0.61)1644.54       1536.70       107.84         J-36       6.56(0.57)1644.54       1538.40       106.14         J-37       3.20(0.64)1644.55       1539.60       104.95         J-38       4.32(0.54)1644.54       1539.50       105.04         J-40       4.86(0.54)1644.54       1539.50       105.04         J-41       4.32(0.54)1644.54       1538.50       106.04         J-42       4.51(0.59)1644.54       1537.20       107.34         J-43       4.32(0.54)1644.54       1538.00       106.54         J-44       1.04(1.04)1644.55       1538.60       105.95		J-30							45.36
J-32       4.86(0.54)1644.55       1537.30       107.25         J-33       2.70(0.54)1644.55       1536.90       107.65         J-34       2.16(0.54)1644.56       1538.90       105.66         J-35       4.92(0.61)1644.54       1536.70       107.84         J-36       6.56(0.57)1644.54       1538.40       106.14         J-37       3.20(0.64)1644.55       1539.60       104.95         J-38       4.32(0.54)1644.54       1539.50       105.04         J-40       4.86(0.54)1644.54       1539.50       105.04         J-41       4.32(0.54)1644.54       1539.30       105.24         J-41       4.32(0.54)1644.54       1537.20       107.34         J-42       4.51(0.59)1644.54       1537.20       107.34         J-43       4.32(0.54)1644.54       1538.00       106.54         J-44       1.04(1.04)1644.55       1538.60       105.95		J-31							46.31
J-33       2.70(0.54)1644.55       1536.90       107.65         J-34       2.16(0.54)1644.56       1538.90       105.66         J-35       4.92(0.61)1644.54       1536.70       107.84         J-36       6.56(0.57)1644.54       1538.40       106.14         J-37       3.20(0.64)1644.55       1539.60       104.95         J-38       4.32(0.54)1644.54       1540.40       104.14         J-39       5.40(0.54)1644.54       1539.50       105.04         J-40       4.00.54)1644.54       1539.30       105.24         J-41       4.32(0.54)1644.54       1538.50       106.04         J-42       4.51(0.59)1644.54       1537.20       107.34         J-43       4.32(0.54)1644.54       1538.00       106.54         J-44       1.04(1.04)1644.55       1538.60       105.95		J-32							46.48
J-34       2.16(0.54)1644.56       1538.90       105.66         J-35       4.92(0.61)1644.54       1536.70       107.84         J-36       6.56(0.57)1644.54       1538.40       106.14         J-37       3.20(0.64)1644.55       1539.60       104.95         J-38       4.32(0.54)1644.54       1540.40       104.14         J-39       5.40(0.54)1644.54       1539.50       105.04         J-40       4.86(0.54)1644.54       1539.30       105.24         J-41       4.32(0.54)1644.54       1538.50       106.04         J-42       4.51(0.59)1644.54       1537.20       107.34         J-43       4.32(0.54)1644.54       1538.00       106.54         J-44       1.04(1.04)1644.55       1538.60       105.95		J-33							
J-35 J-36 J-36 J-36 J-37 J-38 J-38 J-38 J-39 J-38 J-39 J-39 J-39 J-39 J-39 J-40 J-40 J-40 J-42 J-42 J-43 J-43 J-43 J-43 J-43 J-44 J-43 J-44 J-43 J-44 J-44		J-34		•					45.79
J-36     6.56(0.57)1644.54     1538.40     106.14       J-37     3.20(0.64)1644.55     1539.60     104.95       J-38     4.32(0.54)1644.54     1540.40     104.14       J-39     5.40(0.54)1644.54     1539.50     105.04       J-40     4.86(0.54)1644.54     1539.30     105.24       J-41     4.32(0.54)1644.54     1538.50     106.04       J-42     4.51(0.59)1644.54     1537.20     107.34       J-43     4.32(0.54)1644.54     1538.00     106.54       J-44     1.04(1.04)1644.55     1538.60     105.95		J-35							46.73
J-37     3.20(0.64)1644.55     1539.60     104.95       J-38     4.32(0.54)1644.54     1540.40     104.14       J-39     5.40(0.54)1644.54     1539.50     105.04       J-40     4.86(0.54)1644.54     1539.30     105.24       J-41     4.32(0.54)1644.54     1538.50     106.04       J-42     4.51(0.59)1644.54     1537.20     107.34       J-43     4.32(0.54)1644.54     1538.00     106.54       J-44     1.04(1.04)1644.55     1538.60     105.95		J-36	•			-			45.99
J-38 4.32(0.54)1644.54 1540.40 104.14 J-39 5.40(0.54)1644.54 1539.50 105.04 J-40 4.86(0.54)1644.54 1539.30 105.24 J-41 4.32(0.54)1644.54 1538.50 106.04 J-42 4.51(0.59)1644.54 1537.20 107.34 J-43 4.32(0.54)1644.54 1538.00 106.54 J-44 1.04(1.04)1644.55 1538.60 105.95			1						45.48
J-39     5.40(0.54)1644.54     1539.50     105.04       J-40     4.86(0.54)1644.54     1539.30     105.24       J-41     4.32(0.54)1644.54     1538.50     106.04       J-42     4.51(0.59)1644.54     1537.20     107.34       J-43     4.32(0.54)1644.54     1538.00     106.54       J-44     1.04(1.04)1644.55     1538.60     105.95									1
J-40     4.86(0.54)1644.54     1539.30     105.24       J-41     4.32(0.54)1644.54     1538.50     106.04       J-42     4.51(0.59)1644.54     1537.20     107.34       J-43     4.32(0.54)1644.54     1538.00     106.54       J-44     1.04(1.04)1644.55     1538.60     105.95									
J-41     4.32(0.54)1644.54     1538.50     106.04       J-42     4.51(0.59)1644.54     1537.20     107.34       J-43     4.32(0.54)1644.54     1538.00     106.54       J-44     1.04(1.04)1644.55     1538.60     105.95									45.52
J-42 4.51(0.59)1644.54 1537.20 107.34 J-43 4.32(0.54)1644.54 1538.00 106.54 J-44 1.04(1.04)1644.55 1538.60 105.95									45.60
J-43 4.32(0.54)1644.54 1538.00 106.54 J-44 1.04(1.04)1644.55 1538.60 105.95			4 1 4 L						45.95
J-44 1.04(1.04)1644.55 1538.60 105.95						-			46.51
			: .		-				46.17
1645.00 1550.00 95.00					1.04(1.	-			45.91
		'K- T				1645.00	1550.00	95.00	41.17

- (+) INFLOWS INTO THE SYSTEM FROM SUPPLY NODES
  (-) OUTFLOWS FROM THE SYSTEM INTO SUPPLY NODES

NODE NAME	FLOWRATE (gpm)	NODE TITLE	
R- 1	209.92		

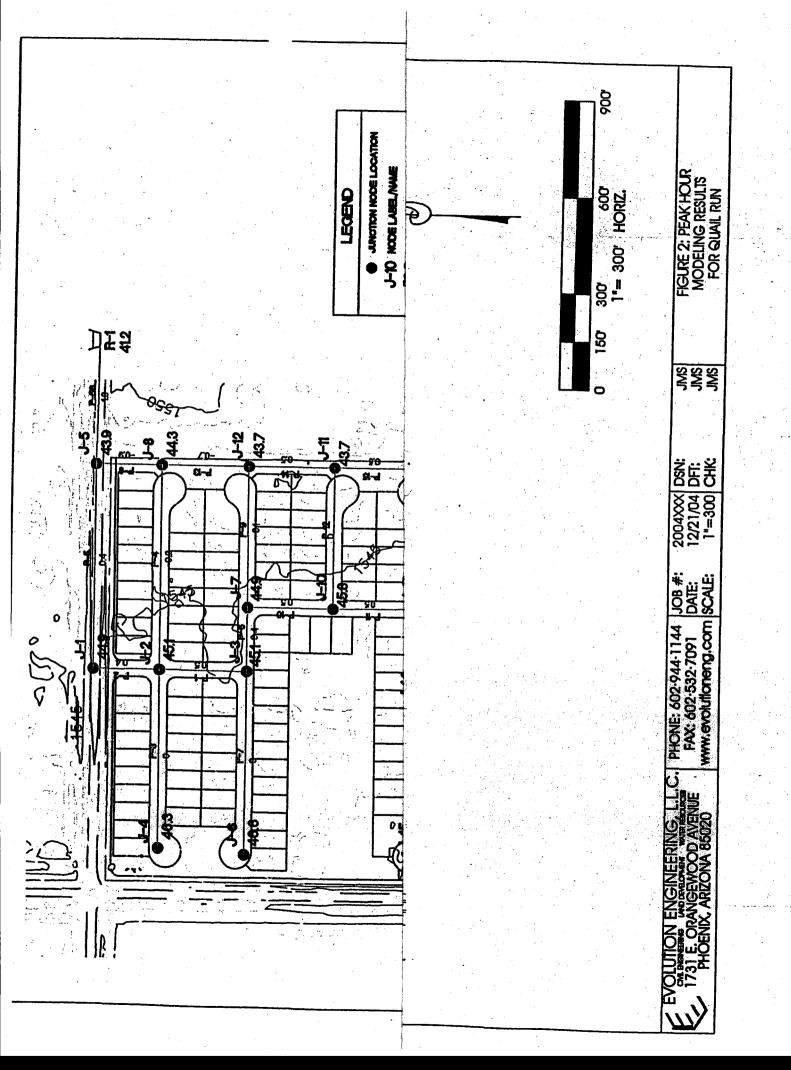
NET SYSTEM OUTFLOW = NET SYSTEM DEMAND =

0.00 209.92

.

## APPENDIX D:

# FIRE FLOW MODELING RESULTS



JUNCTION DEMANDS CHANGED - PLEASE SEE RESULTS TABLE

RESULTS OBTAINED AFTER 4 TRIALS: ACCURACY = 0.00003

#### PIPELINE RESULTS

STATUS CODE:	XX -CLOSED	PIPE	CV -CHECK VALV	Æ			
PIPE NAME	NODE	NUMBERS #2	FLOWRATE		MINOR LOSS	LINE VELO.	HL/ 1000
			(gpm)		(ft)		
P- 1	J- 2	J- 3	471.42	1.38	0.08	2.96	5.34
P- 2	J- 1	J- 2	377.69	0.68	0.05		3.60
P- 3	J- 2	J- 4		0.00			0.00
P- 4	J- 2	J- 8			0.00	0.65	0.31
P- 5	J- 5	J- 1	377.69	2.13	0.02	2.37	3.37
P- 6	J- 3	J- 7		0.97	0.03		
P- 7	J- 3	J- 6	4.86	0.00	0.00	0.03	0.00
P- 8	J- 8	J- 5	~758.49	2.48		4.76	13.20
P- 9	J- 7	J-12 J-10	-82.19	0.09			0.20
P-10			542.48		0.11		6.94
P-11	J-10	J-13	`		0.13	3.39	6.98
P-12	J-10	J-11		0.00			0.00
P-13		J- 8	-652.87	2.51			9.43
P-14	J-11	J-12	-567.01		0.04		7.2
P-15	J-11	J- 9		1.86		3.52	7.09
P-16	J-13	J- 9			0.00	0.34	0.0
P-17	J-13	J-14	484.66	0.91		3.04	5.3
P-18	J-14	J-15		0.00	0.00		
P-19	J-14	J-16	474.47	1.42	0.08		5.40
P-20	J-16	J-21		0.06			0.1
P-21	J-16	J-17	3.96	0.00			
P-22	J-16	J-18		1.66		3.26	
P-23 P-24	J-18	J-22		1.56		3.23	6.6
P-25	J-18	J-19		0.00			0.0
P-26	J-21	J- 9		2.26			
P-27	J-18 J-19	J-20 J-21		0.00			
P-28	J-22	J-31		1.85 0.23			
P-29	J-22	J-23		0.23			
P-30	J-23	J-23		0.00			
P-31	J-23	J-24		0.52			2.0
P-32	J-25	J-28		0.52	0.03		
P-33	J-26	J-28		0.00		0.01	
P-34			3.02				
P-35	J-28 J-28	J-25 J-33	269.11	0.00			0.0 1.8
P-36	J-28 J-30	J-33 J-19	-545.55	1.73		3.42	6.7
P-37	J-30	J-34		0.02	0.04	0.33	0.0
P-38 ^	J-31	J-34			0.00	0.23	
P-39						0.02	3.1
P-40	J-29	J-31		0.81			
P-41		J-29		0.64 0.58			
P-42	J-32	J-37			0.02		
	J-34	J-30				2.59	4.0
P-43	J-33	J-32	-82.11	0.04	0.00	0.51	0.2
P-44	J-33	J-44	349.57	0.75	0.10	2.19	3.2
P-45	J-35	J-41	121.54	0.16	0.01	0.76	0.4
P-46	J-36	J-35	-217.86	0.49	0.01	1.37	1.2
P-47	J-36	J-39	329.53	0.70	0.00	2.07	2.6
P-48	J-37	J-34	-448.58	1.23	0.02	2.81	4.
P-49	J-38	J-37	-676.37	5.98	0.47	4.24	
P-50	J-39	J-38	326.23	0.95	0.15	2.05	
P-51	J-40	J-36	115.93	0.15	0.01		0.4
P-52	J-41	J-40	118.90	0.16		0.75	0.4
D-53	.712	7-35	342 95	0 76	0 06	2 15	2 (

J-35

342.85

0.76

0.06

2.15

J-42

3.03

P-54	J-43	J-42	345.89	1.00	0.00	2.17	2.84
P-55	J-44	J-43	348.53	2.05	0.00	2.19	2.88
P-56	J- 5	R- 1	-1136.17	0.26	0.16	7.12	41.47

#### NODE RESULTS

	NODE		NODE		EXTERNAL	HYDRAULIC	NODE	PRESSURE	NODE
	NAME		TITLE		DEMAND	GRADE	ELEVATION	HEAD	PRESSURE
					(gpm)	(ft)	(ft)	(ft)	(psi)
							. (,		
	J- 1				0.00	1642.43	1541.30	101.13	43.82
	J- 2				6.60(0.	33)1641.70	1540.80	100.90	43.72
	J- 3					33)1640.24	1540.80	99.44	43.09
	J- 4					33)1641.70	1538.00	103.70	44.94
	J- 5				0.00	1644.59	1543.80	100.79	43.67
	J- 6				4.86(0.	42)1640.24	1537.30	102.94	44.61
•	J- 7					33)1639.24	1541.10	98.14	42.53
	J- 8					33)1641.89	1542.70	99.19	42.98
	J- 9					43)1635.50	1542.90	92.60	40.13
	J-10					48)1637.40	1539.10	98.30	42.60
	J-11					33)1637.40	1543.90	93.50	40.52
	J-12					41)1639.33		95.43	41.35
	J-13			- 2		33)1635.54	1538.10	97.44	42.22
	J-14					33)1634.63	1537.80	96.83	41.96
	J-15					47) 1634.63	1536.00	98.63	42.74
	J-16					33)1633.13	1538.20	94.93	41.14
	J-17					33)1633.13	1538.10	95.03	41.18
	J-18					33)1631.31	1537.40	93.91	40.69
	J-19					33)1631.31	1539.90	91.41	39.61
	J-20				2 64 (0	33)1631.31	1536.30	95.01	
	J-21					33)1633.19	1540.90	92.29	41.17 39.99
	J-22					55) 1629.57	1536.20	93.37	40.46
•	J-23					33)1629.18	1537.00	92.18	
	J-24					43) 1629.18	1536.30	92.18	39.94 40.25
	J-25					43)1628.10	1535.60	92.50	
	J-26					50) 1628.63	1535.00	93.53	40.08 40.53
	J-27					33)1628.63	1535.10	93.63	
	J-28					33) 1628.10	1536.10	92.00	40.57
	J-29					42) 1628.47	1535.50	92.97	39.87
	J-30					47) 1629.54	1539.90	89.64	40.29
	J-31					33) 1629.33	1537.70	91.63	38.84
	J-32			*		33) 1627.79	1537.70	90.49	39.71
	J-33				-	33) 1627.76	1537.30		39.21
	J-34					33) 1628.45		90.86	39.37
	J-35	•				43) 1623.04	1538.90	89.55	38.81
	J-36						1536.70		37.41
	J-37					37) 1622.55	1538.40	84.15	36.46
	J-38	*				47) 1627.19	1539.60	87.59	37.96
	J-39				-	* )1620.74		80.34	34.81
	J-40				•	33) 1621.84	1539.50	82.34	35.68
*	J-41					33)1622.70	1539.30		36.14
	J-42					33)1622.87	1538.50	84.37	36.56
	J-43					39)1623.86	1537.20	86.66	37.55
	J-44				2.64(0.	33)1624.86	1538.00	86.86	37.64
					1.04(1.	04)1626.91	1538.60	88.31	38.27
	R- 1					1645.00	1550.00	95.00	41.17

#### SUMMARY OF

- (+) INFLOWS INTO THE SYSTEM FROM SUPPLY NODES (-) OUTFLOWS FROM THE SYSTEM INTO SUPPLY NODES

NODE NAME			
R- 1	1136.17		

NET SYSTEM OUTFLOW = 0.00 NET SYSTEM DEMAND = 1136.17

## **APPENDIX E:**

# FIRE FLOW DEMANDS

#### Fireflow/Hydrant Report:

Specified Minimum Pressure(psi or kPa): 20.00 Minimum Static Pressure(psi or kPa) : 20.00

Flow-1: Flowrate to maintain the specified

pressure at (hydrant) node

Node-2: Node that has a lower pressure than specified value at Flow-1

Flow-2: Flowrate to maintain the specified pressure at Node-2

1540.8 1540.8 1538.0 1543.8 1537.3 1541.1 1542.7 1542.9 1539.1	20.0 10.0 8.0 0.0 11.5 9.0 8.0	45.0 44.9 46.2 43.8 46.4	Flow-1 gpm 4139.7 3439.3 2035.7 14219.5	Flow-2 gpm 14099.9	Node-2
1540.8 1538.0 1543.8 1537.3 1541.1 1542.7 1542.9	20.0 10.0 8.0 0.0 11.5 9.0	45.0 44.9 46.2 43.8 46.4	4139.7 3439.3 2035.7 14219.5		
1540.8 1538.0 1543.8 1537.3 1541.1 1542.7 1542.9	10.0 8.0 0.0 11.5 9.0	44.9 46.2 43.8 46.4	3439.3 2035.7 14219.5	14099 9	
1538.0 1543.8 1537.3 1541.1 1542.7 1542.9	8.0 0.0 11.5 9.0	46.2 43.8 46.4	2035.7 14219.5	14099 9	
1543.8 1537.3 1541.1 1542.7 1542.9	0.0 11.5 9.0	43.8 46.4	14219.5	14099 9	•
1537.3 1541.1 1542.7 1542.9	11.5 9.0	46.4		14099 9	
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		44.2	4784.4	4781.9	J-12
1539.1	7.0	43.8	2525.2		
	11.5	45.5	2979.9	2948.3	J- 9
1543.9	6.0	43.5	2841.2		
1543.9	9.0	43.5	3386.4		**
1538.1	9.0	45.9	2651.6	2631.3	J-38
			2440.3		
				2304.4	J-38
			1564.3		
			2162.3	2126.1	J-38
				1970.4	J-38
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				1906.6	J-38
			1972.6		J-38
				1862.7	J-38
				1827.7	J-44
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1539.5	10.0	45.1	1483.8		
	9.0	45.2	1387.0		
1538.5	8.0	45.6	1396.7		
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#### ${\bf Appendix}\,{\bf B}$

Arizona Department of Environmental Quality
Administrative Code
Sewer Design Standards

#### Department of Environmental Quality - Water Pollution Control

to accommodate the new design flow; or The sewer lines for a sewage collection system for a manufactured home, mobile home, or recrentional vehicle park are not less than four-

inches in diameter for up to 20 units, fiveinches in diameter for 21 to 36 units, and sixinches in diameter for 37 to 60 units.

Design server lines with at least the minimum stope calculated from Manning's Formula using a coefficient of roughness of 0.013 and a scwage velocity of two fect per second when flowing full.

An applicant may request a smaller minimum slope under R18-9-A312(G) if the smaller slope is justified by a quarterly program of inspections, flushings, and cleanings.

If a smaller minimum slope is requested, the slope shall not be less than 50% of that calculated from Manning's formula using a coefficlerit of roughness of 0.013 and a sewage velocity of two feet per second.

Design sower lines to avoid a slope that creates a sewage velocity greater than 10 feet per second. The applicant shall construct any sewer line entrying a flow with a normal velocity of greater than 10 feet per second using ductile iron pipe or pipe with equivalent crosson resistance, and structurally reinforce the receiving manhole or sewer main.

Design and install sewer lines, connections, and fittings with insterials that meet or exceed manufacturer's specifications not inconsistent with this

Chapter to: Limit inflows, infiltration, and exfiltration;

· Resist corrosion in the project electrochemical cavironment;

Withstand anticipated live and dead loads; and

lv. Pravido internal crosion protection.

Indicate trenching and bedding details applicable for each pipe material and size in the design pleas. Sewer lines shall be placed in trenches and bedded following the specifications established in subsections (D)(2)(h)(i) and (D)(2)(h)(ii). This material is incorporated by reference and does not include any later amendments or editions of the incorporated matter. Copies of the incorporated material are available for inspection of the Department of Faylreomental Quality and the Office of the Secretary of State, or may be obtained from the Marienna Assoclation of Governments, 302 N. 1st Avenue, Suite 300, Phoenix. Arizona 85003, or from Pina County Westerrater Maingement, 201 N. Stone Avenue, Tucson, Arizona 85701-1207.

"Trench Excavation, Backfilling, and Compactian" (Section 601), published in the "Uniform Standard Specifications for Public Works Construction," published by the Maricopa Association of Governments, revisions through 2000;

"Rigid Pipe Redding for Sanitary Sewers" (WWM 104), and "Flexible Plps Bedding for Sanitary Sewers" (WWM 105), published by Pima County Waslewater Menagement, revised November 1994.

Perform a deflection test of the total length of all sower lines made of flexible materials to ensure that the installation meets or excoods the Distributions recommendations and record the results.

Test each segment of the sewer line for leakage using the applicable method below and record the results:

"Standard Test Method for Installation of Acceptance of Plastic Gravity Sower Lines Using Low-Pressure Air published by the American Society for Testing and Materials, (F 1417-92), reapproved 1998;

"Standard Practice for Testing Concrete Pipe Sewer Lines by Low-Pressure Air Test Method published by the American Society for Testing and Materials, (C 924-89), respproved 1997;

Standard Test Method for Law-Pressure Air Test of Vitrified Clay Pipe Lines" published by the American Society for Testing and Molerials, (C 828-98), approved March 10, 1998; or

The material listed in subsections (D)(2)(1)(I), (U)(2)(j)(ii), and (D)(2)(j)(iii) is incorporated by reference and does not include any later amendments or editions of the incorporated matter. Copies of the incorporated material are available for inspection at the Department of Environmental Quality and the Office of the Secretary of State, or may be obtained from the American Society for Testing and Materials, 100 Barr Harbor Drive, Conshohocken, PA 19428-2959.

Test the total length of the sewer line for uniform slope by tamp lighting, remote camera or similar method approved by the Department, and record the results.

3. Manholes.

'An applicant shall install manholes at all grade changes, all size changes, all alignment changes, all server intersections, and at any location necessary to comply with the following spacing requirements:

Sewer Fipe Diameter (inches)	Maximum Manhole Spacing (feet)
4 to less than 8	300
8 to less than 18	500
18 to less than 36	600
36 to Jess then 60	890
60 or greater	1300

The Department shall allow greater manhole spacing fullawing the procedure provided in RIR-9-A312(G) if documentation is provided showing the operator prosesses or line available specialized sewer cleaning equipment suitable for the increased spacing.

The applicant shall ensure that manhola design is consistent with "Pre-cost Concrete Sewer Manhole" (1420), "Offset Manhole for 8" - 30" Pipe" (1421), and Brick Sewer Manhole and Cover Prame Adjustment" (#422), 1998, including revisions through 2000, published by the Maricopa Association of Governments, and "Manholes and Appurtenant items" (WWM 201 through WWM 211), Standard Details for Public Improvements, 1994. Edition, published by Pima County Wastewater Management.

The material specified in subsection (D)(3)(c) is incorporated by reference and does not include any fater omendments or editions of the incorporated muter. Copies of the incorporated material are following rules. An applicant shall:

- a. Base design flows for components of the system on unit flows specified in Table 1, Unit Daily Design Flows. If documented by the applicant, the Department may accept lower unit flow values in the served area due to significant use of low flow fixtures.
- b. Use the "Uniform Standard Specifications for Public Works Construction," referenced in this Section and published by the Maricopa Association of Governments, revisions through 2000, or the "Pima County Wastewater Management," November 1994 Edition, as the applicable design and construction criteria, unless the Department approved alternative design standards or specifications authorized by a delegation agreement under A.R.S. § 49-107.
- Use gravity sewer lines, if appropriate. The applicant shall design gravity sewer lines and all other sewer collection system components, including force mains, manholes, list stations, and appurtenant devices and structures to accommodate maximum sewage flows as determined by the method specified in subsections (D)(1)(c)(i) or (D)(1)(c)(ii) that yields the greatest calculated flow:
  - i. Any point in a sewer main when flowing full can accommodate an average flow of 100 gallons per capita per day for all populations upstream from that point; or
  - ii. Any point in a sewer collection system can accommodate a peak flow for all populations upstream from that point as tabulated below:

Upstream Population	Peaking Factor
100	3.62
200	3.14
300	2.90
400	2.74
500	2.64
600	2.56
700	2.50
800	2.46
900	2.42
1000	238
1001 to 10,000	$PF = (6.330 \times p^{-0.231}) + 1.094$
10,001 to 100,000	PF=(6.177 x p <sup>-433</sup> )+1.128
More than 100,000	$PF = (4.500 \times p^{-4.174}) + 0.945$

PF = Peaking Factor p = Upstream Population

- d. Ensure the separation of sewage collection system components from drinking water distribution system components under R18-4-502.
- e. Request review and approval of an alternative to a design feature specified in this Section by following the requirements of R18-9-A312(G).
- Gravity sewer lines. An applicant shall:
  - Ensure that any sewer line that runs between manholes, if not straight, is of constant horizontal curvature with a radius of curvature not less than 200 feet;
  - b. Cover each sewer line with at least three feet of backfill meeting the requirements of subsection (D)(2)(h)(i). The applicant shall:
    - i. Include at least one note specifying this requirement in construction plans;
    - ii. If site-specific limitations prevent three feet of earth cover, provide the maximum cover attainable, and construct the sewer line of ductile iron pipe or other materials of equivalent or greater tensile and compressive strength;
    - iii. If ductile iron pipe is not used, design and construct the sewer line pipe with restrained joints or an equivalent feature; and

- E. Installation requirements. An applicant shall ensure that:
  - 1. The irrigation pipe is installed by a plow mechanism that cuts a furrow, dispenses pipe, and covers the irrigation pipe in one operation, or a trencher and hand tools that dig a trench not more than four inches wide.
  - 2. Drip irrigation pipe has an incorporated herbicide to prevent root intrusion for at least 10 years and an incorporated bactericide to reduce bacterial slime build-up. The applicant shall store drip irrigation pipe to preserve the herbicidal and bactericidal characteristics of the pipe.
- F. Operation and maintenance requirements. In addition to the applicable requirements in R18-9-A313, the permittee shall test the fail-safe mechanism quarterly to prevent discharge of inadequately treated wastewater.

#### R18-9-E323. 4.23 General Permit: 3000 to less than 24,000 Gallons Per Day Design Flow

- A. A 4.23 General Permit allows on-site wastewater treatment facilities with a design flow from 3000 gallons per day to less than 24,000 gallons per day if all of the following apply:
  - 1. Except as specified in subsection (A)(3), the treatment and disposal works consists of technologies or designs that are covered under other general permits, but are sized larger to accommodate increased flows.
  - 2. The on-site wastewater treatment facility complies with all applicable requirements of this Chapter.
  - 3. The facility is not a system or a technology covered by one of the following general permits available for a design flow of less than 3000 gallons per day:
    - a. An aerobic system with subsurface disposal, described in R18-9-E315.
    - b. An aerobic system with surface disposal, described in R18-9-E316,
    - c. A disinfection device, described in R18-9-E320,
    - d. A sequencing batch reactor, described in R18-9-E321, or
    - e. A seepage pit or pits, described in R18-9-E302,
- B. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B), an applicant shall submit:
  - 1. A performance assurance plan consisting of tasks, schedules, and estimated annual costs for operating, maintaining, and monitoring performance over a 20-year useful service life.
  - 2. Design documents and the performance assurance plan sealed by an Arizona-registered professional engineer.
  - 3. Any documentation submitted under the alternative design procedure in R18-9-A312(G) that pertains to achievement of better performance levels than those specified in the general permit for the corresponding facility with a design flow of less than 3000 gallons per day, or for any other alternative design, construction, or operational change proposed by the applicant.
- C. Additional Verification of General Permit Conformance requirements. In addition to any other requirements, the applicant shall submit the following information before the Verification of General Permit Conformance is issued.
  - 1. A signed and sealed Engineer's Certificate of Completion in a format approved by the Department affirming that:
    - The project was completed in compliance with the requirements of this Section and as described in the plans and specifications, or
    - b. Any changes are reflected in as-built plans submitted with the Engineer's Certificate of Completion.
  - The name of a certified operator or service company that is responsible for implementing the performance assurance plan.
- D. Reporting requirement. The permittee shall annually provide the Department with:
  - 1. A form signed by the certified operator or service company that:
    - a. Provides any data or documentation required by the performance assurance plan,
    - b. Certifies compliance with the requirements of the performance assurance plan, and
    - c. Describes any additions to the system during the year that increased flows and certifies that the flow did not exceed 24,000 gallons per day during any day.
  - 2. Any applicable fee required by 18 A.A.C. 14.

Table 1 Unit Daily Decion Flows

	TAUIC 1.	ORIC Daily Design Flows	
Type of Facil	ity Served	Applicable Unit	Sewage Design Flow per Applicable Unit, Gallons Per Day
Airport		Passenger (average daily number)	4
Apartment Building		Employee	15
		Resident (if max. number fixed)	100
1 bedroom		Apartment	200
2 bedroom		Apartment	300
3 bedroom		Apartment	400
4 bedroom		Apartment	500

Auto Wash	Facility	Per manufacturer, if consistent with this
·		Chapter
Bar/Lounge	Seat	30
Barber Shop	Chair	35
Beauty Parlor	Chair	100
	Lane	75
Bowling Alley (snack bar only)	Lanc	
Camp Day camp, no cooking facilities	Compine unit	30
Campground, overnight, flush toilets	Camping unit Camping unit	75
Campground, overnight, flush toilets	Camping unit	150
and shower	Camping unit	130
Campground, luxury	Person	100-150
Camp, youth, summer or seasonal	Person	50
Church	1 (130)	
Without kitchen	Person (maximum attendance)	•
With kitchen	Person (maximum attendance)	7
Country Club	Resident Member	100
County Class	Nonresident Member	100
Dance Hall	Patron	5
Dental Office	Chair	500
Dog Kennel	Animal, maximum occupancy	15
Hospital	7 Minut, maximum occupancy	
All flows	Bed	250
Kitchen waste only	Bed	25
Laundry waste only	Bed	40
Hotel/motel		
Without kitchen	Bed (2-person)	50
With kitchen	Bed (2 person)	60
Industrial facility		
Without showers	Employee	25
With showers	. Employee	35
Cafeteria, add	Employee	5
Institutions	_	
Resident	Person	75
Nursing home Rest home	Person	125
Laundry	Person	125
Self service	Wash cycle	50
Commercial	Washing machine	Per manufacturer, if
Commercial	A szund macunic	consistent with this
		Chapter
Office Building	Employee	20
Park	Employee	20
Picnic, with showers, flush toilets	Parking cases	40
Picnic, with flush toilets only	Parking space	40
Recreational vehicle, no water or	Parking space	20
Sewer connections	Vehicle space	75
Recreational vehicle, with	Walish array	•••
water & sewer connections	Vehicle space	100
Mobile home/Trailer	<b>c</b>	nen
I MANNIC HOHIG HAREI	Space	250

Residence	Person	100
Dwelling, per person (for sewer collection	reison	100
system design only)	D 15 - (2 to Joseph 2011)	450
Dwelling, single family	Dwelling (3 bedrooms assumed)	450
Dwelling, per bedroom if count available	Bedroom	150
Dwelling, per fixture if count available	Fixture unit	25
Mobile home, family	Home lot	250
Mobile home, adults only	Home lot	150
Seasonal and summer	Resident	100
Restaurant/Cafeteria	Employee	20
With toilet, add	Customer	7
Kitchen waste, add	Meal	6 .
Garbage disposal, add	Meal	
Cocktail lounge, add	Customer	2
Kitchen waste disposal service, add	Meal	2
Restroom, public	Toilet ,	200
School		
Staff and office	Person	20
Elementary, add	Student	15
Middle and High, add	Student	20
with gym & showers, add	Student	S
with cafeteria, add	Student	3
Boarding, total flow	Person	100
Service Station with toilets	First bay	1000
	Each additional bay	500
Shopping Center, no food or laundry	Square foot of retail space	0.1
Store	Employee	20
Public restroom, add	Square foot of retail space	0.1
Swimming Pool, Public	Person	10
Theater		
Indoor	Scat .	3
Drive-in	Car space	10

Note: Unit flow rates published in standard texts, literature sources or relevant area or regional studies shall be considered by the Department, if appropriate to the project.

#### ARTICLE. 4. AGRICULTURAL GENERAL PERMITS

#### R18-9-401. Definitions

In addition to the definitions established in A.R.S. §§ 49-101 and 49-201, the following terms apply to this Article:

"Application of nitrogen fertilizer" means any use of a substance containing nitrogen for the commercial production
of crop plants. The commercial production of crop plants includes commercial sod farms and nurseries.

2. "Crop plant needs" means the amount of water and nitrogen required to meet the physiological demands of the crop plant to achieve a defined yield.

"Crop plant uptake" means the amount of water and nitrogen, that can be physiologically absorbed by the roots and vegetative parts of a crop plant following the application of water.

#### R18-9-402. Agricultural General Permits: Nitrogen Fertilizers

A person who engages in the application of a nitrogen fertilizer and is issued an agricultural general permit shall comply with the following agricultural best management practices:

- 1. Limit application of the fertilizer so that it meets projected crop plant needs;
- Time application of the fertilizer to coincide to maximum crop plant uptake;
- 3. Apply the fertilizer by a method designed to deliver nitrogen to the area of maximum crop plant uptake;
- 4. Manage and time application of irrigation water to minimize nitrogen loss by leaching and runoff; and
- 5. Use tillage practices that maximize water and nitrogen uptake by crop plants.

#### R18-9-403. Agricultural General Permits: Concentrated Animal Feeding Operations

A person who engages in or operates a concentrated animal feeding operation and is issued an agricultural general permit shall comply with the following agricultural best management practices:

# EXHIBIT 7

# 2003 ANNUAL REPORT

# ARIZONA CORPORATION COMMISSION UTILITIES DIVISION

#### ANNUAL REPORT MAILING LABEL – MAKE CHANGES AS NECESSARY

WS-02987A SEWER JOHNSON UTILITIES LLC 5320 E SHEA BLVD SCOTTSDALE, AZ 85254

# **ANNUAL REPORT**

FOR YEAR ENDING

12 31 2003

FOR COMMISSION USE

#### **COMPANY INFORMATION**

Company Name (Business Nam	e) JOHNSON OTHERRES, LLC	and the same of th
Mailing Address5320 E. SHE	A BLVD #200	
(Street)		
SCOTTSDALE	AZ (Sha)	85254
(City)	(State)	(Zip)
480-998-3300	480-483-7908	
Telephone No. (Include Area Code)	Fax No. (Include Area Code)	Pager/Cell No. (Include Area Code)
Email Address		
Local Office Mailing Address	SAME	
Ocal Office-Mailing Address	(Street)	
- (City)	(State)	(Zip)
Local Office Telephone No. (Include Area Code	) Fax No. (Include Area Code)	Pager/Cell No. (Include Area Code
Email Address		
<u>M</u> .	ANAGEMENT INFORMAT	ION
		ION
	ANAGEMENT INFORMAT  GEORGE JOHNSON (Name)	TON (Title)
Management Contact:	GEORGE JOHNSON (Name)	(Title)
	GEORGE JOHNSON	(Title) AZ 85254
Management Contact:	GEORGE JOHNSON (Name) SCOTTSDALE (City)	(Title) AZ 85254
Management Contact:	GEORGE JOHNSON (Name)  SCOTTSDALE (City)  480-483-7908	(Title)  AZ 85254 (State) (Zip)
Management Contact:  5320 E. SHEA BLVD #200 (Street)  480-998-3300 Telephone No. (Include Area Code)	GEORGE JOHNSON (Name) SCOTTSDALE (City)	(Title) AZ 85254
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Management Contact:  5320 E. SHEA BLVD #200 (Street)  480-998-3300 Telephone No. (Include Area Code) Email Address	GEORGE JOHNSON (Name)  SCOTTSDALE (City)  480-483-7908 Fax No. (Include Area Code)	(Title)  AZ 85254 (State) (Zip)
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Management Contact:  5320 E. SHEA BLVD #200 (Street)  480-998-3300 Telephone No. (Include Area Code) Email Address On Site Manager:	GEORGE JOHNSON (Name)  SCOTTSDALE (City)  480-483-7908 Fax No. (Include Area Code)  BRIAN P TOMPSETT	(Title)  AZ 85254 (State) (Zip)
Management Contact:  5320 E. SHEA BLVD #200 (Street)  480-998-3300 Telephone No. (Include Area Code) Email Address On Site Manager:  SAME	GEORGE JOHNSON (Name)  SCOTTSDALE (City)  480-483-7908 Fax No. (Include Area Code)  BRIAN P TOMPSETT (Name)	(Title)  AZ 85254 (State) (Zip)  Pager/Cell No. (Include Area Code)
Management Contact:  5320 E. SHEA BLVD #200 (Street)  480-998-3300 Telephone No. (Include Area Code) Email Address On Site Manager:  SAME (Street)	GEORGE JOHNSON (Name)  SCOTTSDALE (City)  480-483-7908 Fax No. (Include Area Code)  BRIAN P TOMPSETT (Name)	(Title)  AZ 85254 (State) (Zip)  Pager/Cell No. (Include Area Code)  (State) (Zip)
Management Contact:  5320 E. SHEA BLVD #200 (Street)  480-998-3300 Telephone No. (Include Area Code)  Email Address On Site Manager:  SAME (Street)  SAME	GEORGE JOHNSON (Name)  SCOTTSDALE (City)  480-483-7908 Fax No. (Include Area Code)  BRIAN P TOMPSETT (Name)  (City)	(Title)  AZ 85254 (State) (Zip)  Pager/Cell No. (Include Area Code)

Statutory Agent: RICHARI			
	(Name)	•	
2525 E. AZ BILTMORE CIR #117	PHOENIX	AZ	85016
(Street)	(City)	(State)	(Zip)
(602)224-9222			
Telephone No. (Include Area Code)	Fax No. (Include Area Code	Pager/Cell No. (I	nclude Area Code)
Attorney: SAME			
	(Name)		
(Street)	(City)	(State)	(Zip)
Telephone No. (Include Area Code)	Fax No. (Include Area Code)	Pager/Cell No. (Ir	ncTude Airea Codé)
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Check the following box that applies to	your company:		
Sole Proprietor (S)	C Corporation (C)	(Other than Asso	ociation/Co-op)
Partnership (P)	Subchapter S Cor	poration (Z)	
Bankruptcy (B)	Association/Co op	(A)	
Receivership (R)	X Limited Liability C	ompany	•
Other (Describe)			
	COUNTIES SERVED		
Check the box below for the county/ies	in which you are certificated to pro	vide service:	
APACHE	☐ COCHISE	Coco	ONINO
☐ GILA	☐ GRAHAM	GREI	ENLEE
☐ LA PAZ	☐ MARICOPA	□ мон	AVE
☐ NAVAJO	☐ PIMA	X PINAI	
☐ SANTA CRUZ	☐ YAVAPAI	YUM	A
☐ STATEWIDE			•

#### UTILITY PLANT IN SERVICE

Acct. No.	DECRIPTION	Original Cost (OC)	Accumulated Depreciation (AD)	O.C.L.D. (OC less AD)
351	Organization			
352	Franchises			
353	Land and Land Rights	910,000		910,000
354	Structures and Improvements	453,663	38,181	415,482
355	Power Generation Equipment			
360	Collection Sewers - Force			
361	Collection Sewers - Gravity			
362	Special Collecting Structures			
363	Services to Customers			
364	Flow Measuring Dévices			-
365	Flow Measuring Installations			
370	Receiving Wells			·
380	Treatment and Disposal Equip.			
381	Plant Sewers	17,432,240	1,007,341	16,424,899
382	Outfall Sewer Lines			
389	Other Plant and Misc. Equipment	5,455	68	5,387
390	Office Furniture and Equipment			
391	Transportation Equipment			
393	Tools, Shop and Garage Equip.			
394	Laboratory Equipment			
395	Power Operated Equipment			
398	Other Tangible Plant			
	TOTALS	18,801,358	1,045,590	17,755,768

This amount goes on the Balance Sheet Acct. No. 108

# COMPANY NAME JOHNSON UTILITIES, LLC

#### **CALCULATION OF DEPRECIATION EXPENSE**

Acct. No.	DESCRIPTION	Original Cost (1)	Depreciation Percentage (2)	Depreciation Expense (1x2)
351	Organization			
352	Franchises			
353	Land and Land Rights	910,000		
354	Structures and Improvements	453,663	2.5%	11,342
355	Power Generation Equipment			
360	Collection Sewers - Force	•		
361	Collection Sewers - Gravity			
362	Special Collecting Structures			
363	Services to Customers			
364	Flow Measuring Devices			
365	Flow Measuring Installations			
370	Receiving Wells			
380	Treatment and Disposal Equip.			
381	Plant Sewers	17,432,240	2.5%	368,911
382	Outfall Sewer Lines		•	
389	Other Plant and Misc. Equipment	5,455	1.25%	68
390	Office Furniture and Equipment			
• 391	Transportation Equipment			
393	Tools, Shop and Garage Equip.			
394	Laboratory Equipment			·
395	Power Operated Equipment			
398	Other Tangible Plant			
	SUBTOTAL	18,801,358		380,321
	CIAC Amortization	·		(210,899)
	TOTALS	18,801,358		169,422

This amount goes on Comparative Statement of Income and Expense Acct. 403



To the Board of Directors of The Sewer Division of Johnson Utilities, L.L.C. Scottsdale, Arizona

We have compiled the balance sheets (as restated) of The Sewer Division of Johnson Utilities, L.L.C. as of December 31, 2003 and 2002, and the comparative statements of income and expenses (as restated) for the years then ended included in the accompanying prescribed form in accordance with Statements on Standards for Accounting and Review Services issued by the American Institute of Certified Public Accountants.

Our compilation was limited to presenting in the form prescribed by the Arizona Corporation Commission information that is the representation of management. We have not audited or reviewed the financial statements referred to above and, accordingly, do not express an opinion or any other form of assurance on them.

These financial statements are presented in accordance with the requirements of the Arizona Corporation Commission, which differ from generally accepted accounting principles. Accordingly, these financial statements are not designed for those who are not informed about such differences.

All other information contained in the accompanying prescribed form has not been audited, reviewed, or compiled by us and, accordingly, we assume no responsibility for that information.

Wham + Company

ULLMANN & COMPANY, P.C. Certified Public Accountants

March 31, 2004

#### **BALANCE SHEET**

Acct.		BALANCE AT		BA	LANCE AT
No.		BEGINNING OF		END OF	
	ASSETS	TE	ST YEAR		YEAR
					`
	CURRENT AND ACCRUED ASSETS				
131	Cash	\$	410,535	\$	164,235
132	Special Deposits		· ·		·
135	Temporary Cash Investments			٠.	
141	Customer Accounts Receivable		136,735		354,247
146	Notes/Receivables from Associated Companies		49,743		9,120
151	Plant Material and Supplies				•
162	Prepayments				3,041
174	Miscellaneous Current and Accrued Assets		117,842		132,848
	TOTAL CURRENT AND ACCRUED ASSETS		, .		•
		\$	714,855	\$	663,491
			•		
	FIXED ASSETS				•
101	Utility Plant in Service		13,444,334		18,801,358
103	Property Held for Future Use				70,257
105	Construction Work in Progress				5,502,892
108	Accumulated Depreciation - Utility Plant		665,269		1,045,590
121	Non-Utility Property				
122 .	Accumulated Depreciation - Non Utility				
	TOTAL FIXED ASSETS	\$	12,779,065	\$	23,328,917
	TOTAL ASSETS	\$	13,493,920	\$	23,992,408

NOTE: Total Assets on this page should equal Total Liabilities and Capital on the following page.

#### BALANCE SHEET (CONTINUED)

Acct.	LIABILITIES	BALANCE AT BEGINNING OF TEST YEAR			LANCE AT END OF
No.	LIABILITIES	1123	SI YEAR	YEAR	
	CALID DEPART A LA DIA AMEN	· · · · · · · · · · · · · · · · · · ·			
	CURRENT LIABILITES		502,407		
	Accounts Payable	\$	583,407	\$	101,712
***	Notes Payable (Current Portion)	ļ			
234	Notes/Accounts Payable to Associated Companies	ļ	28,312	<u> </u>	171,798
235	Customer Deposits				
236	Accrued Taxes		110,682	_	42,234
	Accrued Interest	· ·	50,316		1,690
241	Miscellaneous Current and Accrued Liabilities	<u> </u>			
	TOTAL CURRENT LIABILITIES	\$	772,717	\$	317,434
				1.	·
	LONG-TERM DEBT (Over 12 Months)				
224	Long-Term Notes and Bonds	\$	236,585	\$	220,280
			•		
	DEFERRED CREDITS				
252	Advances in Aid of Construction	\$	5,433,041	\$	10,242,183
253	Other Deferred Credits			1	
255	Accumulated Deferred Investment Tax Credits			1	
271	Contributions in Aid of Construction		5,208,322		11,663,622
272	Less: Amortization of Contributions		167,479		378,378
281	Accumulated Deferred Income Tax				• .
	TOTAL DEFERRED CREDITS	\$	10,473,884	\$	21,527,427
				1	
1	TOTAL LIABILITIES	\$	11,483,186	\$	22,065,141
		<del>                                     </del>		+	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
-	CAPITAL ACCOUNTS	<del> </del>		1	
201	Common Stock Issued	\$		\$	
211	Other Paid in Capital	1		+	
	Retained Earnings	<del>                                      </del>		+-	
	Proprietary Capital (Sole Props and Partnerships)	<del>                                     </del>	2,010,734	+	1,927,267
1210	TOTAL CAPITAL	\$	2,010,734	<del></del>	1,927,267
-	I VIIII VIII III	+	2,010,734	+*	1,741,401
-	TOTAL LIADII ITIEG AND CADIMAY	1	12 400 000	+-	00 000 400
L	TOTAL LIABILITIES AND CAPITAL	\$	13,493,920	\$	23,992,408

#### COMPARATIVE STATEMENT OF INCOME AND EXPENSE

<del>-</del>	OPERATING REVENUES	PRIC	PRIOR YEAR		EST Y	EAR
521	Flat Rate Revenues	\$	576,672	\$		,237,464
522	Measured Revenues		· <u>-</u>	·	<u> </u>	
536	Other Wastewater Revenues		39,700			
•	TOTAL REVENUES	\$	616,372	\$		1,237,464
· ·						
	OPERATING EXPENSES					
701	Salaries and Wages	\$.	-	\$		-
710	Purchased Wastewater Treatment					-
711	Sludge Removal Expense		851			2,685
715	Purchased Power		67,036			69,935
716	Fuel for Power Production					
718	Chemicals		661			
720	Materials and Supplies		8,400			2,904
731	Contractual Services - Professional		177,894			288,797
735	Contractual Services - Testing				•	· . ·
736	Contractual Services - Other					
740	Rents					28,236
750	Transportation Expense					134
755	Insurance Expense				•	6,951
765	Regulatory Commission Expense					
775	Miscellaneous Expense	1	3,911			9,994
403	Depreciation Expense		192,300			16,422
408	Taxes Other Than Income		·			501
408.11	Property Taxes		30,692	٠٠.		17,215
409	Income Taxes					
	TOTAL OPERATING EXPENSES	\$	481,745	\$		443,774
	OTHER INCOME/EXPENSE					<del></del>
419	Interest and Dividend Income	\$	3,492	\$.	•.	4,479
421	Non-Utility Income			<del>                                     </del>	· · ·	
421	Miscellaneous Non-Utility Expenses					· · · · · · · · · · · · · · · · · · ·
427	Interest Expense		29,502	<del> </del>		19,011
421	TOTAL OTHER INCOME/EXP	\$	(26,010)	\$	•	(14,532)
	TOTAL OTHER INCOMEDEAT	4	(20,010)	1 *	<del></del>	(17,372)
	NET INCOME/(LOSS)	\$	108,617	\$	· · · · · · · · · · · · · · · · · · ·	779,158

#### SUPPLEMENTAL FINANCIAL DATA Long-Term Debt

	LOAN #1	LOAN #2	LOAN #3	LOAN #4
	Various	4/9/03		
Date Issued		•		
Source of Loan	Member	Grissom		
ACC Decision No.				
Reason for Loan	Capital Impr.	Land Purchase		
Dollar Amount Issued	\$233,280	\$35,000	\$	\$
Amount Outstanding	\$185,280	\$35,000	\$	\$
Date of Maturity	Demand	4/15/05		
Interest Rate	8%	8%	%	%
Current Year Interest	\$18,589	\$0	\$	\$
Current Year Principle	\$48,000	\$0	\$	\$

#### **WASTEWATER COMPANY PLANT DESCRIPTION**

#### TREATMENT FACILITY

TYPE OF TREATMENT	EXTENDED AERATION, AEROBIC LAGOONS
(Extended Aeration, Step Aeration, Oxidation	
Ditch, Aerobic Lagoon, Anaerobic Lagoon,	
Trickling Filter, Septic Tank, Wetland, Etc.)	
DESIGN CAPACITY OF PLANT	1.6 MGD
(Gallons Per Day)	

#### LIFT STATION FACILITIES

Location	Quantity of Pumps	Horsepower Per Pump	Capacity Per Pump (GPM)	Wet Well Capacity (gals)
MAIN PUMP STATION	2	30	325	7500
REUSE PUMP STATION	2	30	420	1879
UNIT 4A PUMP .	2	75	400	380
UNIT 4D/4F PUMP STATION	2	18	656	1184
UNIT 6 PUMP STATION	2	3	100	440
OASIS @ MAGIC RANCH PUMP STATION	2	7.5	593	887
SUPERSTITION VIEWS	2	7.5	90	440
OASIS SUNRISE	2	15 -	500	2162
SAN TAN PUMP STATION	2	75	500	7500
COPPER BASIN PUMP STATION	2	30	380	7780
CIRCLE CROSS PUMP STATION	2	50	500	2256
PECAN RANCH PUMP STATION	2	75	500	2162
AD & AF	2	45	440	1879
COPPER BASIN #2	2	88	500	1879
RANCHO BELLA VISTA	2	47	500	1879
RANCHO BELLA VISTA #2	2	45 -	500	1879

#### **FORCE MAINS**

Size	Material	Length (Feet)
4-inch	PVC	2,704
6-inch	PVC	6,610
8-inch	PVC	100,042
15-inch	PVC	1,126
12-inch	PVC	4,770
10-inch	PVC	1,973

#### **MANHOLES**

Туре	Quantity
Standard	1183
Drop	5

#### **CLEANOUTS**

÷	Quantity	
256		

10

#### WASTEWATER COMPANY PLANT DESCRIPTION CONTINUED

#### **COLLECTION MAINS**

#### **SERVICES**

Size (in inches)	Material	Length (in feet)
4		
6		9467
8		251061
10		19309
12		22620
. 15		1126
18		2800
21		
24		
30		
1		

Size	<u> </u>	· · · · · · · · · · · · · · · · · · ·
(in inches)	Material	Quantity
4		6006
6		2
. 8		
12		
. 15		
•		

#### FOR THE FOLLOWING FIVE ITEMS, LIST THE UTILITY OWNED ASSETS IN EACH CATEGORY

SOLIDS PROCESSING AND HANDLING FACILITIES	NONE
DISINFECTION EQUIPMENT (Chlorinator, Ultra-Violet, Etc.)	6 CHLORINATORS
FILTRATION EQUIPMENT (Rapid Sand, Slow Sand, Activated Carbon, Etc.)	NONE
STRUCTURES (Buildings, Fences, Etc.)	FENCES – 12 WELL SITES, 6 WATER PLANTS, 11 LIFT STATIONS. 1 WWTP.
OTHER (Laboratory Equipment, Tools, Vehicles, Standby Power Generators, Etc.	3 GENERATORS, 1 BACKHOE, 1 BULL DOZER

#### WASTEWATER FLOWS

MONTH/YEAR (Most Recent 12 Months)	NUMBER OF SERVICES	TOTAL MONTHLY SEWAGE FLOW	SEWAGE FLOW ON PEAK DAY
January 2003	1769	4,528,000	160,000
February 2003	1900	4,645,000	167,000
March 2003	2054	4,977,000	196,000
April 2003	2226	4,655,000	170,000
May 2003	2384	4,908,000	196,000
June 2003	2595	5,262,000	192,000
July 2003	2699	5,806,000	195,000
August 2003	2960	10,200,000	350,000
September 2003	3140	10,717,000	360,000
October 2003	3400	11,408,000	408,000
November 2003	3461	11,526,000	603,000
December 2003	3719	12,199,000	597,000

#### PROVIDE THE FOLLOWING INFORMATION AS APPLICABLE

Method Of Effluent Disposal	Recharge
(leach field, surface water discharge, reuse, injection wells, groundwater	Evaporation
recharge, evaporation ponds, etc.)	
Wastewater Inventory Number	103081
(all wastewater systems are assigned an inventory number)	
Groundwater Permit Number	58-106857.0005, 58-113322.0004
ADEQ Aquifer Protection Permit Number	P103081
ADEQ Reuse Permit Number	R103081
EPA NPDES Permit Number	N/A

#### STATISTICAL INFORMATION

			٠.				
Total number of customers	3719					 	
		•.					
Total number of gallons treated_	90,831,000		 			gallons	
				•		,,	

# JOHNSON UTILITIES COMPANY PLANT INVENTORY WASTEWATER

SACKBONE MAINS						20.00	17.2 ve	N d pl	N/a .	Total Mains 4' 14.11. 6' M.H.	4. X.H. 6		0.0	No or
Profect	16" Mains	supply _91	12" Hains	10° Mains	S. Main	o men	ELC .							
							ng Q					-	ç	
Men Pump Station		200	1000		Ş	1 670	866				1	-	1	T
Mach WowTP		C Sec	3								3		-	1
10 Variable 6		136	8	•									ē	-
OF ITALK SPINE!					_	25.7	-				+	-		
4A Station							18.477				2	1		T
San Tan Force Lift Sta & Force Mn							0.750					_		1
Spelies 44 Respon						1	3							1
					510	3					ļ	L	<u> </u>	285
Sec 11 WWJP							29,200				•		-	
Pecan Rarch Pump Sta & Force Mn					18				88				1	I
Amerithm Views Pump Ste & F. M.					1		727.					-	1	1
all and formation							5						_	
CITCA CLOSS PUTTO SON MING (CLOS IVIII							3071							
Copper Basin Plamp Sta and force Min							5783				1	+	1	
Ossis at Made Pump sta &Force Min							2080						1	T
Ocean Sumise Pump Sta & Force Min									1349			1	1	T
ADVAF Pump Station & Force Main					1							1	1	
10-17-4 20 commands and Force Main				19/3									1	į
		:					C12 000		1 847	•	Z	•	111	B
		35	7.770	1.973	1,137	8,610	780,001			000	-	-		
1651									e e					
				,										
							•							•

# JOHNSON UTILITIES COMPANY PLANT INVENTORY WASTEWATER

# PEATMENT DI ANTS

				Deedsd	Tax
4 E E	GPD	Lot Size		to JUC?	Parcel
District.					
ODDOWN COMPANY OF THE PARK OF	4 614	A7 Arras		Gen Hunt	200-24-003D5 (77 287 Ac 77)
JOHNSON RAHGH MAIN 198417	B/071	33.50	 	C 4 C	7700 00 070
Precision	I. JAN	37 10			
Manuard	Reilind	¥			
, and the same of					
-					**************************************

# LIFT STATIONS

		Number			Wet Well	Decded	RX.
Neme	Location	Pumps	Horsepower	GPM each	Capacity	to JUC?	Parcel
1000	Market Diant #4	6	8	325	7500		
Main otalion			4 1	027	1000		
Station4A	JR Unit 4	2	B,'/	130	200		
Station 5	<b>JR धेंगा</b> ड	2	60	100	3		
San Tao Station	San Ten Unit XX	2	25	500	7500		
Peran Station		2	75	200	1879		
Bailea Station		2	30	420			
Superstation Views	Superstiftion Views	2	7.5	08	440		,
4D/4F	111	2	3				
Conner Beath	Cooper Basin Devel	2	30	. 380	1688		
Copper Deeln		2	88	380	3750		
Copyel Desir		2	88	200	1879		
	Marin Doney Dhoes 4	2	7.5	593			
Magic Manch Phase (		7	15	800	1879		-
Casis office		2	47				

JOHNSON UTILITY COMPANY PLANT INVENTORY AWASTEWATER

1,000   1,00	8.8	
\$\begin{array}{c c c c c c c c c c c c c c c c c c c	9 7	
1,000   1,000   2,000   3,000   3,00	-	28
8,477		2.484
9,000         9,000 <th< td=""><td> </td><td></td></th<>		
5,659         659         659           6,659         559         10           6,659         551         10           6,659         7,04         52           6,659         7,04         52           6,670         7,04         7,04           6,670         7,04         7,04           6,075         7,104         7,104           6,075         7,104         7,104           6,075         7,104         7,104           6,075         7,104         1,104           7,104         7,104         1,104           7,104         7,104         1,104           7,104         7,104         1,104           7,104         7,104         1,104           7,104         7,104         1,104           7,104         7,104         1,104           7,104         7,104         1,104           7,104         1,104         1,104           7,104         1,104         1,104           7,104         1,104         1,104           7,105         1,104         1,104           7,106         1,104         1,104           7,106         1,		
3,000         3,000 <td< td=""><td></td><td></td></td<>		
8.469 2.27 8.469 8		
8.447 1041		
4,900         776         92         10           8,8370         1,002         33         10           8,8370         1,002         33         10           1,4415         1,709         41         13         10           1,4416         1,709         41         13         10         10         10           1,544         1,709         1,709         1,14         13         10 <td></td> <td>1000</td>		1000
8,540 2,544 8,540 8,540 1,140 1,	3	1 4 49.4
8,600 8,		
2,277 1,4,416 1,5,778 1,5,778 1,5,778 1,1,40 1,40 1,40 1,40 1,40 1,40 1,40 1,40 1,40 1,40 1,40 1,40 1,40 1,4	2	1,2/2
2.773 2.773 2.774 6.776 6.776 6.776 6.776 7.7776 7.776 7.776 7.776 7.776 7.776 7.776 7.776 7.776 7.7776 7.7776 7.7776 7.7776 7.7776 7.7776 7.7776 7.7776 7.7776 7.7776 7.7776 7.7776 7.7776 7.7776 7.7776 7.7776 7.77776 7.		
6,778         4,416         1,708         4,20         1,20		
0.7781 0.7781		
6,543         6,543         6,543         6,543         6,543         6,543         6,543         6,543         6,543         6,543         6,543         7,544         7,544         7,544         7,544         7,544         8         6,543         7,544         7,544         8         6,543         8         6,543         7,544		
6,778         2,146         2,154         3         6,78         7,79         8,41         8,41         1,66         8,42         1,66         1,66         1,66         1,66         1,67         1,68 <th< td=""><td></td><td></td></th<>		
6,578         7,544         7,544         13         10         21           2,600         2,546         3,400         2,000         1,10         2	1	1
8,578         3,578         8         8         8         9         8         9         9         9         9         9         4         11         12	46	2
5,327     10       5,327     10       5,025     13       2,860     13       2,400     20       4,500     20       2,540     20       4,540     10       2,140     11       4,286     11       4,480     11       5,774     11       4,480     11       2,176     12       4,480     16       2,176     16       4,480     16       3,780     16       4,480     16       2,176     16       3,780     16       4,480     16       4,480     16       1,280     16       1,280     10       1,280     10       1,280     10       1,280     10       1,280     10       1,280     10       1,280     10       1,281     10       1,281     10       1,281     10       1,281     10       1,281     10       1,281     10       1,281     10       1,241     10       1,242     10       1,242     10		
5,327       6,025       1,862       2,646       2,546       4,500       4,500       2,546       4,200       4,400       4,400       1,140       1,140       1,140       1,140       1,140       1,140       1,140       1,140       1,140       1,140       1,140       1,160       1,160       1,160       1,160       1,160       1,160       1,160       1,160       1,160       1,160       1,160       1,160       1,160       1,160       1,160       1,160 <t< td=""><td></td><td></td></t<>		
8,540 8,		
6,025     16       3,862     13       2,648     14       6,075     20       3,400     20       4,500     20       2,548     10       4,200     3       4,200     10       4,200     9       4,200     9       4,200     9       4,200     9       4,200     9       4,200     9       4,200     9       4,200     9       4,200     9       4,200     9       4,444     1       2,344     20       4,444     1       3,700     1       4,444     1       3,700     1       4,444     1       3,700     1       4,444     1       3,700     1       4,445     1       3,700     1       4,445     1       3,700     1       1,250     1       1,250     1       1,250     1       1,250     1       1,250     1       1,250     1       1,250     1       1,250     1       1,250		
3,400 4,500 2,400 4,500 2,400 4,500 2,400 4,500 4,500 4,500 4,500 4,500 4,500 4,500 4,500 4,500 4,500 4,500 4,500 4,600 4,		
2,540     10       2,540     20       4,500     20       4,500     20       2,540     20       4,500     20       2,540     20       4,200     21       4,200     3       4,200     11       4,200     9       4,200     9       4,200     9       4,200     9       4,200     11       4,200     9       4,484     11       2,344     20       4,484     11       3,700     12       4,484     12       3,700     14       4,484     16       4,484     16       3,700     16       4,484     16       3,700     16       4,484     16       3,700     16       4,484     16       4,484     16       2,374     20       1,484     17       1,484     17       1,485     16       1,486     16       1,480     16       1,480     16       1,480     16       1,480     16       1,480     16	:	
2,546 2,540 2,546 2,546 2,546 2,546 2,546 4,286 4,286 4,286 4,486 6,446 6,448 6,		
2,559 3,400 4,500 4,500 4,500 2,646 4,220 3,720 4,340		
5,076         2.0         14         8           3,400         2.0         2.0         2.0           4,500         2.546         10         21           2,546         10         21         1           4,260         14         4         1           4,286         4,386         11         4           4,286         4,286         11         4           4,286         4,484         17         1           4,489         17         1         1           4,489         16         1         1           4,489         16         1         1           4,489         16         1         1           4,489         16         1         1           4,489         16         1         1           3,708         16         1         1           4,489         16         1         1           3,709         16         1         1           4,489         16         1         1           1,269         16         4         1           1,249         16         4         1 <t< td=""><td>_</td><td></td></t<>	_	
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3,400 2,546 2,546 3,760 4,200 4,300 4,400 4,		
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INCO	ME TAXES
For this reporting period, provide the following:	
Federal Taxable Income Reported Estimated or Actual Federal Tax Liability	N/A (LLC) N/A (LLC)
State Taxable Income Reported Estimated or Actual State Tax Liability	N/A (LLC) N/A (LLC)
Amount of Grossed-Up Contributions/Advances:	
Amount of Contributions/Advances Amount of Gross-Up Tax Collected Total Grossed-Up Contributions/Advances	0 0 0
close of the tax year when tax returns are comp are due to any Payer or if any gross-up tax information by Payer; name and amount of con	ty will refund any excess gross-up funds collected at the eleted. Pursuant to this Decision, if gross-up tax refunds refunds have already been made, attach the following tribution/advance, the amount of gross-up tax collected, attach the Utility expects to make or has made the refund
CERTIFICATION	
in the prior year's annual report. This certification of the managing general limited liability company of the sole proprietor,  SIGNATURE	has refunded to Payers all gross-up tax refunds reported ation is to be signed by the President or Chief Executive I partner, if a partnership; the managing member, if a if a sole proprietorship.  A. 15. 2004  DATE
GEOME H. JOHNSON PRINTED NAME	HANNGR TITLE

#### PROPERTY TAXES

Amount of actu	al property ta	ixes paid duri	ng Calendar Y	ear 2003 was: \$	251,456	-	
				stamped "paid in I during the calend		of cancelled	checks for
If no property ta	eves naid evi	olain why					
ir no property w		, , , , , , , , , , , , , , , , , , ,		. •	•	-	
•							

## VERIFICATION AND SWORN STATEMENT Intrastate Revenues Only

VERIFICATION
STATE OF ARIZONA
L. THE UNDERSIGNED

,

COUNTY OF (COUNTY NAME)
MARICOPA

NAME (OWNER OR OFFICIAL) TITLE

GEORGE H. JOHNSON

COMPANY NAME

JOHNSON UTILITIES L.L.C. - SEWER DIVISION

OF THE

DO SAY THAT THIS ANNUAL UTILITY REPORT TO THE ARIZONA COPRORATION COMMISSION

FOR THE YEAR ENDING

MONTH DAY YEAR
12 31 2003

HAS BEEN PREPARED UNDER MY DIRECTION, FROM THE ORIGINAL BOOKS, PAPERS AND RECORDS OF SAID UTILITY; THAT I HAVE CAREFULLY EXAMINED THE SAME, AND DECLARE THE SAME TO BE A COMPLETE AND CORRECT STATEMENT OF BUSINESS AND AFFAIRS OF SAID UTILITY FOR THE PERIOD COVERED BY THIS REPORT IN RESPECT TO EACH AND EVERY MATTER AND THING SET FORTH, TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF.

#### **SWORN STATEMENT**

IN ACCORDANCE WITH THE REQUIREMENT OF TITLE 40, ARTICLE 8, SECTION 40-401, ARIZONA REVISED STATUTES, IT IS HEREIN REPORTED THAT THE GROSS OPERATING REVENUE OF SAID UTILITY DERIVED FROM ARIZONA INTRASTATE UTILITY OPERATIONS DURING CALENDAR YEAR 2003 WAS:

(THE AMOUNT IN BOX ABOVE INCLUDES \$ 86,548 IN SALES TAXES BILLED, OR COLLECTED

\*\*REVENUE REPORTED ON THIS PAGE MUST INCLUDE SALES TAXES BILLED OR COLLECTED. IF FOR ANY OTHER REASON, THE REVENUE REPORTED ABOVE DOES NOT AGREE WITH TOTAL OPERATING REVENUES ELSEWHERE REPORTED, ATTACH THOSE STATEMENTS THAT RECONCILE THE DIFFERENCE. (EXPLAIN IN DETAIL)

(496) 998/-3300

SUBSCRIBED AND SWORN TO BEFORE ME

A NOTARY PUBLIC IN AND FOR THE COUNTY OF

Ally Court Explice 5-2-2005

SIHT

NOTARY PUBLIC - ARIZONA

SINGLE MANAGER STATES

SIHLE

SINGLE MANAGER STATES

S

NVNCEE B' IBMIN (CHAR)

DAY OF

MONTH APRIL

20 94

SIGNATURE OF NOTARY PUBLIC

MY COMMISSION EXPIRES

16

## VERIFICATION AND SWORN STATEMENT RESIDENTIAL REVENUE

VERIFICATION

INTRASTATE REVENUES ONLY

STATE OF ARIZONA	(COUNTY NAME)	MARICOPA	• • •	
THE UNDERSIGNED	NAME (OWNER OR OFFICIAL)	GEORGE H. JOHNSON	TITLE PRESIDEN	r
F THE	COMPANY NAME JOHNS	on utilities L.L.C. – Sewer	DIVISION	
O SAY THAT THIS ANNU	AL UTILITY REPOR	T TO THE ARIZO	ONA CORPORATION	COMMISSION
OR THE YEAR ENDING	MONTH DAY 12 31	YEAR 2003		· · · · · · · · · · · · · · · · · · ·
THE SAME TO BE A UTILITY FOR THE	ED UNDER MY DIE UTILITY; THAT I HA COMPLETE AND CO PERIOD COVERED NG SET FORTH, TO	AVE CAREFULLY RRECT STATEMI BY THIS REPORTED IN THE REPORTED I	EXAMINED THE SA ENT OF BUSINESS AI ET IN RESPECT TO	AME, AND DECLA ND AFFAIRS OF SA EACH AND EVE
WORN STATEMENT	<b>r</b> -			
ARIZONA INTRASTATE GROS \$ 1,312,	S OPERATING REVENUES	(THE AM INCLUD IN SALE	ALENDAR YEAR MOUNT IN BOX AT L ES \$85,811 S TAXES BULLED, OF	EFT 1
MUST INCLUDE SALES X	TAXES BILLED.		SIGNATURE OF OWNER OR	DIFFICIAL DIFFICIAL
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A NOTARY P	UBLIC IN AND FOR	THE COUNTY OF		2004
OFFICIAL SEAL NANCEE P. IRV NOTATY PUBLIC - ARI SEAL PRIOPA COUNT L'Y COMMISS	VIN \$ . ZONA \$ . Y	x <u>-</u> (	SIGNATURE OF NO	A flewer
X,	Kry 20,20	05		<b>y</b> /

#### **EXHIBIT 8**

## APPROVAL OF CONSTRUCTION

PENDING

ADEQ

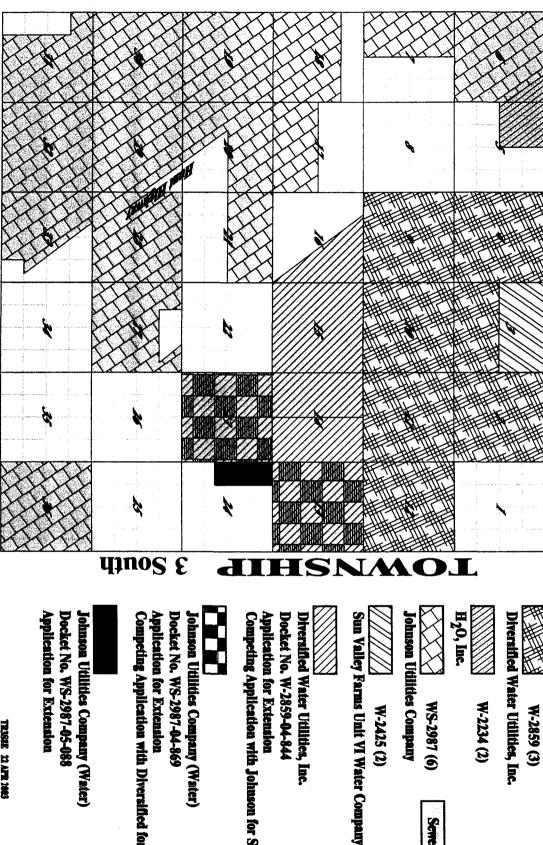
REVIEW



# COUNTY Pinal

RANGE

8 East



Diversified Water Utilities, Inc. W-2859 (3)

W-2234 (2)

H<sub>2</sub>0, Inc.

WS-2987 (6)

Serrer

Johnson Utilities Company

W-2425 (2)

Docket No. W-2859-04-844

Application for Extension

Competing Application with Johnson for Sections 13 & 23



ohnson Utilities Company (Water)

Application for Extension Docket No. WS-2987-04-869

Competing Application with Diversified for Sections 13 & 23



Application for Extension Docket No. WS-2987-05-088 Johnson Utilities Company (Water)

## EXHIBIT A-3 Amethod Amethod

#### EXHIBIT "A"

A PARCEL OF LAND BEING SITUATE IN THE WEST HALF OF THE WEST HALF OF SECTION 24, TOWNSHIP 3 SOUTH, RANGE 8 EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, PINAL COUNTY, ARIZONA, HAVING A BOUNDARY MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING FOR A TIE AT THE ARIZONA HIGHWAY DEPARTMENT BRASS CAP MARKING THE NORTHWEST CORNER OF SAID SECTION 24, FROM WHICH THE ARIZONA HIGHWAY DEPARTMENT BRASS CAP MARKING THE WEST QUARTER SECTION CORNER OF SAID SECTION 24 BEARS SOUTH 0 DEGREES 18 MINUTES 56 SECONDS EAST, 2652.01 FEET DISTANT;

THENCE NORTH 89 DEGREES 58 MINUTES 50 SECONDS EAST, 1351.43 FEET TO THE WEST 1/16 CORNER OF SAID SECTION 24;

THENCE SOUTH 0 DEGREES 16 MINUTES 45 SECONDS EAST, 40.00 FEET TO THE TRUE POINT OF BEGINNING:

THENCE CONTINUING SOUTH 0 DEGREES 16 MINUTES 45 SECONDS EAST, 2611.66 FEET TO A POINT ON THE EAST-WEST MID-SECTION LINE OF SECTION 24;

THENCE SOUTH 0 DEGREES 26 MINUTES 44 SECONDS EAST, 713.09 FEET TO THE SOUTHEAST CORNER OF SUBJECT PARCEL:

THENCE SOUTH 89 DEGREES 57 MINUTES 58 SECONDS WEST, 1307.23 FEET TO THE SOUTHWEST CORNER OF SUBJECT PARCEL, SAID POINT BEING ON THE EASTERLY RIGHT-OF-WAY LINE OF QUAIL RUN ROAD;

THENCE NORTH 0 DEGREES 38 MINUTES 54 SECONDS WEST, 713.11 FEET TO A POINT ON THE EAST-WEST MID-SECTION LINE, SECTION 24 AND FROM WHICH POINT THE WEST QUARTER SECTION CORNER OF SECTION 24 BEARS SOUTH 89 DEGREES 57 MINUTES 58 SECONDS WEST, 40.00 FEET;

THENCE NORTH 0 DEGREES 18 MINUTES 56 SECONDS WEST, ALONG THE EASTERLY RIGHT-OF-WAY LINE OF QUAIL RUN ROAD 2612.00 FEET;

THENCE NORTH 89 DEGREES 58 MINUTES 50 SECONDS EAST, 1311.40 FEET TO THE TRUE POINT OF BEGINNING.



#### SALLQUIST & DRUMMOND, P.C.

ATTORNEYS AT LAW
TEMPE OFFICE
4500 S. LAKESHORE DRIVE
SUITE 339
TEMPE, ARIZONA 85282

RICHARD L. SALLQUIST

PHONE (602) 224-9222 FACSIMILE (480) 345-0412 E-MAIL <u>dick@sd-law.com</u>

June 1, 2005

Colleen Ryan Arizona Corporation Commission Docket Control 1200 West Washington Street Phoenix, Arizona 85007

Re: Johnson Utilities Company; Docket No. WS-02987A-05-0088; Affidavit of Publication

Dear Ms. Ryan:

Pursuant to the Procedural Order dated April 12, 2005, enclosed please find the original and fifteen copies of the Affidavit of Publication in the subject Docket.

In the event you have any questions regarding this matter, please do not hesitate to contact the undersigned.

Sincerely,

Richard L. Sallquist

Enclosures

Cc:

Hearing Division Legal Division Utilities Division Brian Tompsett

### Tribu

Account Number: 5414923

P.O. Number: WS-02987-A-05-0088

Invoice Number: 172120

Price: \$ 128.84

STATE OF ARIZONA County of Maricopa

I, Susan Pacholke, Legal Representative, acknownust be filed on or before June 6, 2005. The granting of the intervention, among other things, entitles a party to bresent sworn evidence at hearing and to cross-examine publication are as follows: May 13, 2005

The granting of motions to intervene by A.A.C. R14-3-105, except that all motions to intervene will not present sworn evidence at hearing of the intervention, among other things, entities a party to present sworn evidence at hearing and to cross-examine the witnesses. Failure to intervene will not preclude any potential customer from appearing at the hearing and naking a statement on such person's own behalf. You will not, however, receive any further notice of proceeding unless requested by you.

The Tribune (East Valley & Scottsdale Editions)

Susan Pacholke, Legal Representative

STATE OF ARIZONA **COUNTY OF MARICOPA** 

On February 11, 2005, Johnson Utilities Company ("Application with the Arizona Corporation Commission" ("Commission") for an extension of its Certificate of Convenience and Necessity to provide water and wastewater service to an area encompassing a development known as Quali Run in Pinal County. If the Application is granted, the Applicant would be the exclusive provider of water and wastewater service to the area, and would be required by the Commission to provide service under rates and charges and terms and conditions established by the Commission. The Application is available for inspection during regular business hours at the offices of the Commission in Phoenix, at 1200 West Washington Street, Phoenix, Arizona, and at the offices of the Company, 5230 E. Shea Blvd. Suite 200, Scottsdale, AZ 85254.

The Commission will hold a hearing on this matter beginning on July 13, 2005, at 1:00 p.m., at the Commission's offices, 1200 West Washington Street, Phoenix, Arizona. Public comment will be taken on the first day of the hear-

The law provides for an open public hearing at which, The law provides for an open public nearing at which, under appropriate circumstances, interested parties may intervene. Intervention shall be permitted to any person entitled by law to intervene and having a direct and substantial interest in the matter. Persons desiring to intervene must file a written motion to intervene with the Commission, which motion should be sent to the Applicants or its counsel and to all parties of record, and which, at the minimum, shall contain the following:

- The name, address, and telephone number of the proposed intervenor and of any party upon whom service of documents is to be made if different than the intervenor.
- A short statement of the proposed intervenor's interest in the proceeding (e.g., a customer of the Applicants, a shareholder of the Applicants, etc.)
- A statement certifying that a copy of the motion to intervene has been mailed to the Applicants or their counsel and to all parties of record in the case.

inless requested by you.

The Commission does not discriminate on the basis of disability in admission to its public meetings. Persons with a disability may request a reasonable accommodation such as a sign language interpreter, as well as request this document in an alternative format, by contacting Linda Hogan. ADA Coordinator, voice phone number 602/542-3931, E-mail Lhogan@admin.cc.state.az.us. Requests should be made as early as possible to allow to arrange the accommodation.

May 13, 2005/172120

On May 13, 2005, Susan Pacholke personally appeared before me, whom I know personally to be the person who signed the above document and he/she proved he/she signed it.

**NOTARY PUBLIC** 

OFFICIAL CEAL SHARON GRADID ANCISIRA-DIJBUTI YRATON PINAL COUNTY

My Commission Expires Outober 11, 2007

#### JOHNSON UTILITIES COMPANY L.L.C

#### 5230 East Shea Boulevard \* Scottsdale, Arizona 85254 PH: (480) 998-3300; FAX: (480) 483-7908

EXHIBIT

A-5

MAN-HIM

June 30, 2005

Ms. Colleen Ryan Docket Control Arizona Corporation Commission 1200 W. Washington Street Phoenix, Arizona 85007

RE:

Johnson Utilities Company:

Docket No. WS-02987A-05-0088

Dear Ms. Ryan:

In response to the staff report filed June 6, 2005 regarding the above mentioned docket, Johnson Utilities Company submits the Master Utility Agreement between Standard Pacific of Arizona, Inc. for the Quail Run subdivision attached hereto as Attachment No. 1.

Once the CC&N has been granted, copies of the agreements will be submitted to the Utilities Division in accordance with the rules. Should you have any questions or concerns, please do not hesitate to contact me. Thank you for your time and consideration in this matter.

Daniel Hodges

Johnson Utilities, LLC

#### Enclosure

Cc: Brian Tompsett, Johnson Utilities (w/out enc.)

Earnest Johnson, Director Utilities Division (w/enc.)

Steve Olea, Assistant Director (w/enc.)

Brian Bozzo, Compliance Manager (w/enc.)

Christopher Kempley, Chief Counsel (w/enc.)

Judge Nodes, Hearing Division (w/enc.)

Ms. Lyn Farmer, Hearing Division (w/enc.)

Richard Sallquist, Sallquist & Drummond (w/enc.)

Docket Control (w/enc.)

## ATTACHMENT 1



#### MASTER UTILITY AGREEMENT FOR

#### WATER AND WASTEWATER FACILITIES

#### **BETWEEN**

#### JOHNSON UTILITIES, L.L.C. dba JOHNSON UTILITIES COMPANY

AND

STANDARD PACIFIC OF ARIZONA, INC.

**FOR** 

QUAIL RUN PINAL COUNTY, ARIZONA

April 2/, 2005

#### MASTER UTILITY AGREEMENT

THIS MASTER UTILITY AGREEMENT, entered into this 21 day of April, 2005, by and between JOHNSON UTILITIES, L.L.C., an Arizona limited liability company and a public service corporation duly approved as such by the Arizona Corporation Commission dba JOHNSON UTILITIES COMPANY, or its successors and assigns (hereinafter referred to as the "Company") and STANDARD PACIFIC OF ARIZONA, INC., a Delaware corporation, or its successors or assigns, (hereinafter referred to as "Developer"), regarding the provision of water and wastewater utility services to QUAIL RUN, a master planned community in Pinal County, Arizona (hereinafter referred to as the "Development").

#### RECITALS:

WHEREAS, the Company owns and operates a public service corporation and holds a Certificate of Convenience and Necessity ("CC&N") authorizing it to provide the public with water and wastewater utility services; and

WHEREAS, Developer is the owner of an approximately 100-acre Development, is building residential improvements within the Development, and desires the Company to provide water and wastewater service to the Development, which is more fully described on **Attachment** A hereto; and

WHEREAS, the Development is not currently located within the water or wastewater CC&N of the Company; and

WHEREAS, Company has filed an application with the Arizona Corporation Commission ("Commission") requesting authorization to extend its water and wastewater CC&N to include the Development, and is willing to extend service upon approval of such application; and

WHEREAS, Developer will construct a total of approximately 351 residential units within the Development; and

WHEREAS, the Developer has obtained certain zoning authorizations and approvals for the master plan on a community wide basis; and

WHEREAS, for the Developer to obtain: (1) the required approvals for the Development, and (2) necessary financing for development of and improvements within the Development, it is necessary for the Developer to have certain assurances regarding the provision of water and wastewater services and facilities within the entire Development at this time; and

WHEREAS, in connection with it providing utility services, the Company is authorized and required to assess Off-Site Facilities Hook-Up Fees ("HUFs") for water and wastewater service pursuant to Commission approved Tariffs authorized for the Company; and

WHEREAS, in areas such as the Development, in which the Company does not presently own and operate a water system or wastewater collection system, the Commission's Rules and Regulations contemplate the Company and the Developer entering into a Line Extension

Agreement(s), attached hereto as Attachments B and C, as more particularly described below; and

WHEREAS, the Company requires certain onsite facilities which will enable the Company to provide water and wastewater service to the Development; and

WHEREAS, in consideration of the Company's extending water and wastewater service to the Development as contemplated herein and in Line Extension Agreements concerning the Development, Developer is willing to convey fee simple title to the onsite facilities.

NOW, THEREFORE, it is mutually covenanted and agreed by and between the parties hereto as follows:

- 1. Advance Payment of HUFs. To permit the Company to provide water service, and wastewater treatment plant capacity, lift-stations, transmission mains, an effluent delivery and disposal systems, and sludge disposal facilities, as well as the water wells, treatment if necessary, storage, pressure and the transmission facilities, necessary to meet the Company's and applicable regulatory agencies' requirements to serve the Development, Developer agrees to advance HUF payments for all the residential units within the Development in accordance with the Commission approved Tariffs for the Company. For this Development, the total advances shall be \$315,900.00 for water facilities, based on \$900.00 per 4" water lateral for each residential lot, and \$351,000.00 for wastewater facilities, based on \$1,000.00 per 4" sewer lateral for each residential lot. These charges are based on the Schedule of Hook-Up Fees, attached hereto as Attachment D. Developer also agrees to pay Company's upfront engineering costs directly to Company's designated engineers for service, the amount of which shall be credited against any payments due by Developer under this Agreement. In the event that the Commission issues a final order denying Company's application for an extension of its water and wastewater CC&N to serve to the Development, all upfront engineering costs paid directly to the Company's designated engineers shall be refunded to Developer. Payment of the advance for said HUFs under this paragraph shall be made upon: 1) final plat approval for the Development; and 2) a final order of the Commission approving Company's water and wastewater CC&N extension application. Any applicable Gross-Up Tax associated with the HUFs shall be assessed and refunded under the Line Extension Agreement(s) described below. All funds collected by the Company as HUFs shall be deposited into a separate interest bearing trust account and used for the purpose of paying for the costs of off-site facilities for the benefit of the Development, including repayment of loans obtained for the installation of off-site facilities. The HUFs shall be utilized in accordance with the Company's tariff which will directly benefit the Company's system, of which the Development will be a part. Notwithstanding any provision of this Agreement, nor by the payment of any HUF hereunder, shall the Developer obtain any right, title or interest in, or claim to service from, any specific plant of the Company.
- 2. Development Schedule. Commencing September 1 of the year first following the Company's service to the first customer within the Development, Developer shall provide the Company with a schedule indicating, to the best of Developer's knowledge, the projected development schedule for the Development, including the numbers and types of residential units expected to be constructed, any commercial and industrial development, the phasing of the projects within the Development, and the estimated number of units constructed annually until

build-out is reached. Developer shall thereafter provide the Company updated projections on or before September 1 of each succeeding calendar year through build-out.

- 3. Notice to the Company. The Company will supply water and wastewater service to the Development as provided for in this Agreement as and when requested, provided that Developer has paid the HUFs in accordance with this Agreement and further provided Developer has given no less than six (6) months written notice of that required service to the Company. Upon payment of the HUFs by Developer, the Company shall undertake such advance planning, process and obtain all government approvals and permits, and undertake construction so as to timely serve potential customers as and when service to such customers is requested and needed.
- 4. Developer Provided Information and Data. Upon execution of this Agreement, Developer shall provide to the Company in a digital format (i.e., AutoCad, MicroStation or .dxf format or as otherwise specified by the Company), all available data for the Development, including ALTA surveys, topographical, aerials, tentative plats, engineering plans, and final plats. Updated data will be provided to the Company on a timely basis.
- 5. Permanent Wastewater Treatment Facility. Wastewater service shall be subject to the Provisions of Service regulations set forth in AAC R14-2-607(C) & (D), the applicable ADEQ Regulations, or the terms and conditions of this Agreement, whichever is more strict. Lift station site(s) that are required, if applicable, to serve the Development will be conveyed to the Company, and must include appropriate maintenance, ingress and egress easements. Said facilities will be operated and maintained in accordance with good utility practice, including but not limited to the use of qualified operators and engineers. The Company is solely responsible for the disposal of the treated effluent from a permanent wastewater treatment plant, and represents that said disposal will meet all pertinent County, State and Federal regulations and requirements.
- 6. Water Utility Services. Water service shall be provided contemporaneously with wastewater service. The Company hereby agrees to provide Developer water utility services for the Development under the terms and conditions specifically set forth in this Agreement and the On-Site Line Extension Agreement for water service. Water utility service shall be provided to the Development in accordance with industry standards and all applicable laws, orders, decisions, and regulations. The Company represents and warrants that the provision of water utility service by the Company to the Development will, at all times, meet the requirements of ADEQ and the Department of Real Estate for approval of the residential subdivisions within the Development.
- 7. Allocation of Assured Water Supply. Upon payment of the Advance Payment of HUFs by Developer, the Company will allocate units of its Designation of Assured Water Supply to the Development equal to the service requirements associated with the Development, which shall include 351 units.
- 8. Line Extension Agreements. Company and Developer shall enter into separate Line Extension Agreements for water and wastewater service in accordance with the Commission's Rules and Regulations, and the Company's Tariff. The Line Extension Agreement(s) may be a universal agreement with supplemental addenda for each separate parcel

of subdivision, if applicable. Under the terms of the agreement, Developer shall construct, or cause to be constructed, all on-site facilities consistent with the Company's engineering requirements and specifications, and thereafter, convey all right, title and interest in and under those facilities, and any easements if necessary, to the Company. The Company shall annually refund to Developer five percent (5%) of the total gross annual revenue from water and wastewater sales to each bona fide customer whose service is connected to main lines covered by the line extension agreement, less all applicable sales, transaction and privilege taxes and regulatory assessments and surcharges, until such time as the entire advance has been fully refunded.

- 9. Assignment. Developer may assign its rights under this Agreement to any third party, or partially assign its rights under this Agreement with respect to any part of the Development sold by Developer to a third party. A copy of the written Assignment and Assumption shall be delivered to the Company as provided in Paragraph 10. Upon full or partial assignment of this Agreement to a third party and the Company's approval of that assignment, which approval shall not be unreasonably withheld, the Developer shall be relieved of all liabilities under this Agreement.
- 10. Notice. Except as otherwise required by law, any notice required or permitted under this Agreement must be in writing and must be given by either: (i) personal delivery; (ii) United States certified mail, return receipt requested, with all postage prepaid and properly addressed; (iii) any reputable, private overnight delivery service with delivery charges prepaid and proof of receipt; or (iv) by facsimile machine or telecopier. Notice sent by any of the foregoing methods must be addressed or sent to the party to whom notice is to be given, as the case may be, at the addresses or telecopy numbers set forth below:

Developer: STANDARD PACIFIC OF ARIZONA, INC.

6710 North Scottsdale Road, Suite #150

Scottsdale, AZ 85253 Attn: Carol Grumley Tel: (480) 627-7500 Fax (480) 627-7615

Company:

JOHNSON UTILITIES, LLC 5230 East Shea Boulevard Scottsdale, Arizona 85254

Attn: George H. Johnson / Brian Tompsett

Tel: (480) 998-3300

Any party may change its address or telecopy number for purposes of delivery and receipt of notices by advising the other parties in writing of the change. Notice provided by the methods described above will be deemed to be received: (i) on the day of delivery, if personally delivered; (ii) on the date which is three (3) days after deposit in the United States mail, if given by certified mail; (iii) on the next regular business day after deposit with an express delivery service for overnight, "same day", or "next day" delivery service; or (iv) on the date of transmittal, if given on a regular business day and during regular business hours by facsimile

machine or telecopy. No notice will be effective unless provided by one of the methods described above.

- 11. Severability. In the event that any provision of this Agreement or portion thereof is held by the Commission, or an arbitrator(s) or court of competent jurisdiction to be unenforceable or invalid, the validity and enforceability of the enforceable portion of any such provision and of the remaining provisions shall not be adversely affected.
- 12. Alternative Dispute Resolution. The parties hereto agree that each will use good faith efforts to resolve, through negotiation, disputes arising hereunder without resorting to mediation, arbitration or litigation. However, to the extent that a dispute arises which cannot be resolve through negotiation, and the dispute does not fall within the jurisdiction of the Commission, the parties agree to the following dispute resolution mechanisms:
  - a. <u>Mediation</u>. The parties shall first attempt, in good faith, to resolve the dispute through mediation administered by the American Arbitration Association under its Commercial Mediation Rules.
  - Arbitration. If a dispute cannot be resolved as set forth above, the matter shall be submitted to binding arbitration in accordance with the rules of commercial arbitration ("Rules") then followed by the American Arbitration Association ("AAA"), Phoenix, Arizona. If the claim in dispute does not exceed \$20,000, then there shall be a single arbitrator selected by mutual agreement of the parties, and in the absence of agreement, appointed according to the Rules. If the claim in dispute exceeds \$20,000, the arbitration panel shall consist of three (3) members, one of who shall be selected by Developer, one of who shall be selected by Company, and the third, who shall serve as chairman, whom shall be selected by the AAA. The arbitrator or arbitrators must be knowledgeable in the subject matter of the dispute. The costs and fees of the arbitrator(s) shall be divided equally between the parties. Any decision of the arbitrator(s) shall be supported by written findings of fact and conclusions of law, and shall be based upon sound engineering practice. The decision of the arbitrator(s) shall be final, subject to the exceptions outlined in the Arizona Uniform Arbitration Act, A.R.S. Section 12-1502, et seq., and judgment may be entered upon the same; provided, however, that any decision of the arbitrator(s) may be appealed to the Superior Court of Maricopa County if it is based on an erroneous interpretation, application or disregard of the law applicable to the dispute. The arbitrator(s) shall control discovery in the proceedings and shall award the prevailing party its reasonable attorneys' fees and costs.
- by Developer to assist Developer with Final Plat, ADEQ and Arizona Department of Real Estate approvals, and Developer shall take all reasonable actions requested by the Company to assist the Company in obtaining all regulatory approvals necessary to serve the Development. Each party shall reimburse the other for all reasonable costs it incurs in providing such assistance.

- 14. Time. Time is of the essence of this Agreement.
- 15. Headings. Headings in this Agreement are included for the convenience of the parties and shall not be construed as substantive provisions of the Agreement or as an indication of the intent of the parties with respect to any part hereof.

IN WITNESS WHEREOF, the parties have executed this Agreement as of the day and year first above written.

STANDARD PACIETC OF JOHNSON UTILITIES COMPANY ARIZONA, INC. Carol Grumley ice President Its: bevelope Bruce Schroeder Vice President

Its:

#### **ATTACHMENTS**

- A. Legal Description of Development
- B. Water Line Extension Agreement
- C. Wastewater Line Extension Agreement
- D. Hook-up Fee Schedule

1620718.1/51239.011

#### **EXHIBIT "A"**

A PARCEL OF LAND BEING SITUATE IN THE WEST HALF OF THE WEST HALF OF SECTION 24, TOWNSHIP 3 SOUTH, RANGE 8 EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, PINAL COUNTY, ARIZONA, HAVING A BOUNDARY MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING FOR A TIE AT THE ARIZONA HIGHWAY DEPARTMENT BRASS CAP MARKING THE NORTHWEST CORNER OF SAID SECTION 24, FROM WHICH THE ARIZONA HIGHWAY DEPARTMENT BRASS CAP MARKING THE WEST QUARTER SECTION CORNER OF SAID SECTION 24 BEARS SOUTH 0 DEGREES 18 MINUTES 56 SECONDS EAST, 2652.01 FEET DISTANT;

THENCE NORTH 89 DEGREES 58 MINUTES 50 SECONDS EAST, 1351.43 FEET TO THE WEST 1/16 CORNER OF SAID SECTION 24;

THENCE SOUTH 0 DEGREES 16 MINUTES 45 SECONDS EAST, 40.00 FEET TO THE TRUE POINT OF BEGINNING;

THENCE CONTINUING SOUTH 0 DEGREES 16 MINUTES 45 SECONDS EAST, 2611.66 FEET TO A POINT ON THE EAST-WEST MID-SECTION LINE OF SECTION 24;

THENCE SOUTH 0 DEGREES 26 MINUTES 44 SECONDS EAST, 713.09 FEET TO THE SOUTHEAST CORNER OF SUBJECT PARCEL;

THENCE SOUTH 89 DEGREES 57 MINUTES 58 SECONDS WEST, 1307.23 FEET TO THE SOUTHWEST CORNER OF SUBJECT PARCEL, SAID POINT BEING ON THE EASTERLY RIGHT-OF-WAY LINE OF QUAIL RUN ROAD;

THENCE NORTH 0 DEGREES 38 MINUTES 54 SECONDS WEST, 713.11 FEET TO A POINT ON THE EAST-WEST MID-SECTION LINE, SECTION 24 AND FROM WHICH POINT THE WEST QUARTER SECTION CORNER OF SECTION 24 BEARS SOUTH 89 DEGREES 57 MINUTES 58 SECONDS WEST, 40.00 FEET;

THENCE NORTH 0 DEGREES 18 MINUTES 56 SECONDS WEST, ALONG THE EASTERLY RIGHT-OF-WAY LINE OF QUAIL RUN ROAD 2612.00 FEET;

THENCE NORTH 89 DEGREES 58 MINUTES 50 SECONDS EAST, 1311.40 FEET TO THE TRUE POINT OF BEGINNING.

#### EXHIBIT B

#### WATER LINE EXTENSION AGREEMENT

[to come]

#### EXHIBIT C

#### WASTEWATER LINE EXTENSION AGREEMENT

[to come]

#### EXHIBIT D

#### OFF-SITE WASTEWATER FACILITIES HOOK-UP FEES

Service Lateral Size	<u>Fee</u>	Number	<b>Extended</b>
4"	\$1,000.00	351	
6"	\$2,000.00		
8 or greater	\$4,000.00		
Total Hook-up Fees		\$351,000.00	

#### OFF-SITE WATER FACILITIES HOOK-UP FEES

Meter Size	Fee	Number	Extended
5/8" x 3/4"	\$750.00		
<sup>3</sup> / <sub>4</sub> " Meter	\$900.00	351	
1" Meter	\$1,500.00		
1-1/2" Meter	. \$3,000.00		
2" Meter	\$4,800.00		
3" Meter	\$9,000.00		
4" Meter	\$15,000.00		
6" Meter or greater	\$30,000.00		
Total Hook-up Fees		\$315,900.00	)



## Johnson Utilities Company - System #11-128

Option #1

Option #2

Well #4

"blended & treated"

Well #4+#5

Note: LOW NITRATES HAVE BEEN ASSUMED FOR ALL PRODUCTION WELLS PRODUCTION OPTIONS WITHIN JOHNSON UTILITIES SERVICE AREA

**EXCEPT FOR WELL #4.** Well Identification System # 11-128 Identification Number THE AREA LOCATED MITHIN NUMBER ADEQ FILE including R.O. loss TOTAL FLOW PER ESTIMATED (gal/min) PER WELL IN: PRODUCTION CAPABILITY ESTIMATED "Untreated" PER WELL IN: PRODUCTION CAPABILITY Plus Others ESTIMATED (gal/day)

	San Jan Holyina #2 (0)	Planting (5)	Moming Sun Farms (4)	Circle Cross Well #1 (untreated)	Skyline (untreated) (3)	Oasis Well No. 2 (untreated)(2)	Oasis Well No. 3 (ullugated)	Cast in a (intrasted)(2)	Ossis Well No. 1 (untreated)(2)	Edwards Road Well No. 2 (unueated) (1)	J. K. Well #4 lies to Comment	treated)	B Well #4 plus #5 (blended)	J.R. Well No. 4 (Treated with K.O. Utily	J.A. AACH IAC. T. C. T.	o woll No 4 (untreated)	Production:	
TOTAL ESTIMATED WELL PRODUCTION (GPM)	TOTAL ESTIMATED WELL PRODUCTION GPD	55-598836   San I an His. 20000101	MOLINION	Cilcio Cioo	2	-	55-582088 Oasis 20010611	55-582087 Casis 20010011	Outro	+	55-586189 Johnson Zuulua/	MISC. JOHNSON	10	+	55-558445 Johnson 980000	55-558445	1	
RODUCTION (GPM)	PRODUCTION (GPD)		700	1100	1000	1000	110		110	110	30	22.5	917	1000			500	
4,000	0,/1/,000	000 474 0	1,008,000	1,584,000	1,440,000	1,440,000	100,100	158 400	158,400	150,400	150 400	50.400	0			0	720,000	
2007	5 083	7 318 080	1,008,000	1,584,000	1,440,000	1,710,000	1 440 000	158,400	158,400	100,400	158 400	50,400	1,320,480			0	c	

Capacity Storage

Units served @

28,146

TOTAL ESTIMATED STORAGE CAPACITY (Gallons) ircle Cross Johnson Johnson Johnson Oasis 20020489 20020539 20000556 20010377 900086 (Gallons) 500,000 3,970,480 100,000 500,000 500,000 50,000 000,000 320,480 260 Gal/unit/day

ESTIMATED 1 DAY SYSTEM PRODUCTION and STORAGE CAPACITY (Gallons) LESS FIRE STORAGE CAPACITY AS REQUIRED BY FIRE DISTRICT (Gallons) WELL PRODUCTION WITHOUT CIRCLE CROSS OPERATING (Gallons/day) 10,160,560 6,310,080

-120,000

Production from J.R. Well #4 plus #5 (blended)

rcle Cross Water Plant No. San Tan Water Plant No. 1

Johnson Ranch Water Plant No. Edwards Road Water Plant No. 2

Oasis Water Plant No. 1

ohnson Ranch Water

Units served @ 260 Gal/unit/day 39,079

- (\*) Pending Indicates that the improvement plans have been submitted to ADEQ.
- (1) Indicates actual maximum flow data
- (2) Indicates actual maximum flow & permitted data
- (3) Indicates actual & permitted data
- (4) ADEQ approval of construction issued June 3, 2005. (5) ADEQ approval of construction issued April 18, 2005.



#### BEFORE THE ARIZONA CORPORATION COMMISSION

JEFF HATCH-MILLER, CHAIRMAN
MARC SPITZER, COMMISSIONER
WILLIAM A. MUNDELL, COMMISSIONER
MIKE GLEASON, COMMISSIONER
KRISTEN K. MAYES, COMMISSIONER

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IN THE MATTER OF THE APPLICATION OF JOHNSON UTILITIES COMPANY FOR AN EXTENSION OF ITS CERTIFICATE OF CONVENIENCE AND NECESSITY FOR WATER SERVICE.

DOCKET NO. WS-02987A-05-0088

JOINT SETTLEMENT STATEMENT OF JOHNSON UTILITIES COMPANY AND DIVERSIFIED WATER UTILITIES, INC.

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Johnson Utilities, LLC, d.b.a. Johnson Utilities ("Johnson") and Diversified Water Utilities, Inc. ("Diversified") (collectively the "Companies") file this joint settlement statement in conjunction with submitting to the Arizona Corporation Commission (the "Commission") their Letter of Mutual Understanding, Cooperation and Settlement dated June 20, 2005, a copy of which is attached.

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Johnson and Diversified hold certificates of convenience and necessity to provide domestic water service in Pinal County, Arizona. Johnson also holds a certificate of convenience and necessity to provide sewer service. Their respective certificated areas are in close proximity to one another. Over the past five years, the Companies have both sought to extend their certificated areas to encompass the same territory. The competing applications have caused the Companies to incur significant costs and created uncertainty on the part of landowners as to which Company would provide water service.

In order to allow both Companies to concentrate on the operation of their respective systems, to serve their existing customers and to focus on integrating the

substantial growth of the area into those systems, including economies of scale, Diversified and Johnson have agreed that it is most effective, efficient and beneficial for all concerned, including the public and the appropriate regulators, for the Companies to cooperate with each other. The Letter of Mutual Understanding, Cooperation and Settlement sets forth the principles by which Johnson and Diversified agree to cooperate on a going forward basis. The settlement permits both Companies to devote their energies and resources to operating their respective Companies instead of challenging each other before the various agencies and courts. The settlement also ensures that the two Companies will avoid unnecessary duplication of water facilities and eliminates confusion as to which entity is willing to provide water service within delineated planning areas.

The Companies agree that the appropriate demarcation of the southern boundary of Diversified and the northern boundary of Johnson for water service planning is a line running from west to east along Bella Vista Road along the Bella Vista Road alignment between the Union Pacific Railroad (the "Tracks") and the Central Arizona Project Canal (the "Canal"). The western boundary of Diversified and the eastern boundary of Johnson will be the Tracks, north of Bella Vista Road. The eastern boundary of Diversified and the western boundary of Johnson on the east for the area south of Skyline Road will be the Canal north of Bella Vista Road. There is a vast area of land owned by the State of Arizona east of the Canal and north of Skyline Road, which is not addressed by the Companies' settlement.

The Companies also agree that they will not seek to extend their certificates or operations within the other's planning area. The Companies have further agreed that in furtherance of public interest and economies of scale, they will not support the provision of domestic water service by any other water provider within their respective planning areas.

Consistent with the Letter of Mutual Understanding, Cooperation and

1 Settlement, Diversified expresses its support of Johnson's application to extend its CC&N in 2 this docket. 3 Further the Companies respectfully request that the Commission, as part of its 4 Order entered in this docket, acknowledge the efforts of the Companies and find that the 5 Letter of Mutual Understanding, Cooperation and Settlement is consistent with the public 6 interest. 7 RESPECTFULLY SUBMITTED this 30<sup>th</sup> day of June, 2005. 8 SALLQUIST & DRUMMOND, P.L.L.C. CURTIS, GOODWIN, SULLIVAN, 9 UDALL & SCHWAB, B.L.C. 10 By: By: Richard L. Sallquist William P. Sullivan 11 2525 East Arizona Biltmore Circle, #117 2712 North Seventh Street 12 Phoenix, Arizona 85016 Phoenix, Arizona 85006-1090 Attorneys for Johnson Utilities L.L.C. Attorneys for Diversified Water 13 Utilities, Inc. 14 PROOF OF AND CERTIFICATE OF MAILING 15 I hereby certify that on this 30<sup>th</sup> day of June, 2005, I caused the foregoing document to be served on the Arizona Corporation Commission by delivering the original and thirteen (13) copies 16 of the above to: 17 **Docket Control Division** Arizona Corporation Commission 18 1200 West Washington Street Phoenix, Arizona 85007 19 Copies of the foregoing hand-delivered 20 this 30<sup>th</sup> day of June, 2005 to: 21 Dwight D. Nodes, Administrative Law Judge Arizona Corporation Commission 22 1200 West Washington Street Phoenix, Arizona 85007 23 David Ronald, Esq. 24 Legal Division Arizona Corporation Commission 25 1200 West Washington Street

Phoenix, Arizona 85007

1	Copies of the foregoing mailed this 30 <sup>th</sup> day of June, 2005 to:
2	Patrick J. Black, Esq.
3	Jay Shapiro, Esq. FENNEMORE CRAIG
4	A Professional Corporation 3003 North Central Avenue, Suite 2600
5	Phoenix, Arizona 85012 Attorneys for Standard Pacific Corporation
6	
7	Manx Naller
8	1620\3-3-3 (Quaif Run)\Pleadings\Joint Settlement Statement.doc
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#### JOHNSON UTILITIES COMPANY L.L.C

5230 East Shea Boulevard \* Scottsdale, Arizona 85254 PH: (480) 998-3300; FAX: (480) 483-7908

June 20, 2005

Mr. Scott W. Gray Diversified Water Utilities, Inc 2850 E. Camelback Road, Suite 200 Phoenix, Arizona 85016-4316

Re: Letter of Mutual Understanding, Cooperation, and Settlement

Dear Scott:

I enjoyed meeting with you and Bill Sullivan on Thursday, May 12, 2005, to discuss the common interests of Johnson Utilities, L.L.C. ("Johnson") and Diversified Water Utilities, Inc. ("Diversified"). Johnson and Diversified (collectively referred to as the "Companies") enjoy the benefits and burdens of operating utilities in one of the fastest growing areas in the country.

To allow both companies to concentrate on the operation of their respective systems to serve their existing customers, and to focus on integrating the substantial growth of the area into those systems, including economies of scale, we agree that it would be most effective, efficient and beneficial to all concerned, including the public and the appropriate regulators, that the Companies cooperate with each other in serving this area consistent with the settlement principles set forth in this letter (the "Agreement").

Given the fact that there are pending, and/or soon-to-be filed, Certificate of Convenience and Necessity ("CC&N") Applications by both Companies before the Arizona Corporation Commission (the "Commission"), there appears to be a logical planning area for the respective companies that we can both support and that will settle any potential disputes in that regard. Again, this will permit both Companies to devote their energies and resources to operating the Companies instead of challenging each other before the various agencies and courts.

The water utility plant required to serve the area between the two existing utilities will be very expensive to construct. The duplication of water facilities by the Companies in this area would be a disservice to the Companies and future customers. Based upon our combined knowledge of the present and future demand for water and wastewater services in the area, as well as the existing utility plants of the Companies, we have agreed that the best and most effective development of the area consistent with the public interest would be to establish Planning Areas to ensure water and sewer needs of future growth can be met in an economical and reliable fashion.

Based on the foregoing considerations, the Companies agree that the appropriate demarcation of the southern boundary of Diversified, and the northern boundary of Johnson, for water service planning, would be a line running West to East along the Bella Vista Road alignment between the Union Pacific Railroad (the "Tracks") and the Central Arizona Project Canal (the "Canal"). The western boundary of Diversified, and the eastern boundary of Johnson will be the Tracks, north of Bella Vista Road. The eastern boundary of Diversified, and the

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western boundary of Johnson on the East for the area South of Skyline Road will be the Canal north of Bella Vista Road. This letter does not address water utility service to the vast area of land owned by the State of Arizona East of the Canal and North of Skyline Road. The above-described lines define and divide what will hereinafter be referred to as the Planning Areas of the Companies. A sketch of the boundaries of the respective Planning Areas is depicted on the map attached hereto as Exhibit A.

The Planning Areas being agreed upon by the Companies, and with the pending CC&N Applications of the Companies in their various procedural postures, the parties have entered into this Agreement and to the following actions:

- 1. As soon as practicable, Diversified will file an Application to Intervene and intervene in the Johnson CC&N Application, Docket No. WS-02987A-05-0088, regarding the approximate 100 acre parcel located at the southeast corner of Bella Vista Road and Quail Run Lane, which intervention will not be opposed by Johnson.
- 2. Diversified and Johnson will not object to the May 11, 2005 Procedural Order issued in the competing CC&N Applications of Diversified and Johnson in Docket Nos. W-02859A-04-0844 and WS-02987A-04-0869, except as may be necessary to pursue and implement this Agreement.
- 3. On or before June 30, 2005, the parties shall jointly file this Agreement and a Joint Settlement Statement in all three of the above Dockets pursuant to which:
  - (a) The boundaries of and the rationale for the foregoing Planning Areas will be set out and the Companies, their officers, directors and employees will: (i) take no action to provide water service within the other Company's Planning Area; (ii) not oppose and, if requested, will support, the provision of water service by Diversified within Diversified's Planning Area and by Johnson within Johnson's Planning Area; and (iii) not support the provision of domestic water service by any other water provider within the Planning Areas.
  - (b) Diversified will modify its CC&N Application in Docket No. WS-02859A-04-0844 to be consistent with the Diversified Planning Area and as otherwise required under this Agreement.
  - (c) Johnson will withdraw its CC&N Application for Section 13 West of the CAP Canal, in Township 3 South, Range 8 East, G&SRB&M, Pinal County Arizona ("Section 13") and withdraw its objections to Diversified's modified CC&N Application in Docket No. WS-02859A-04-0844 with respect to the Diversified Planning Area. Johnson will support the modified Application of Diversified in Docket No. WS-02859A-04-0844.

- (d) Diversified will withdraw its objections to Johnson's CC&N Application in Docket No. WS-02987A-04-0869 as modified by the deletion of Section 13 and as otherwise required under this Agreement. Diversified will support the modified Application of Johnson in Docket No. WS-02987A-04-0869, as well as the Application of Johnson in Docket No. WS-02987A-05-0088.
- (e) Johnson will file an application for an extension of its wastewater CC&N for all areas within Diversified's CC&N for which Johnson has received a request for sewer service.
- (f) Johnson will continue to pursue and file new sewer CC&N applications for areas within Diversified's existing water CC&N when Johnson receives a request for sewer service.
- (g) The parties will use their best reasonable efforts and work jointly with the Commission Staff to effectuate the above Settlement.
- 5. The parties will work jointly with the Arizona Department of Environmental Quality ("ADEQ") and the Commission Staff to effectuate a water interconnect agreement and design for emergency service requirements. Though each company will use commercially reasonable efforts to enter into a water interconnect agreement that is mutually acceptable to both parties, this agreement is not contingent upon obtaining a water interconnect agreement between the parties.
- 6. Diversified shall modify, amend or if necessary file a CC&N Application for the area described in Paragraph 3(a) above. Johnson believes it is in the public interest to recognize and operate within the Planning Areas and will support Diversified and use its commercially reasonable efforts to assist Diversified in obtaining formal Requests for Service from the property owners in the Planning Area of Diversified as modified and set forth in this agreement. Johnson will not use the affidavits previously filed with the Commission on or about April 29, 2005 in conjunction with Johnson's Motion to Continue. Any costs or expenses associated with the actions taken by each party under Paragraph (6), shall be the responsibility of the individual party.
- 7. So as to permit the development of Diversified's water CC&N area, Johnson will file appropriate applications for wastewater CC&Ns for developments for which Johnson does not now hold a CC&N, and which are within Diversified's existing or proposed CC&N area. Johnson will file those applications as the property owners of those areas request wastewater service. Johnson does not propose to extend wastewater CC&N applications for areas within Diversified's existing or proposed CC&N areas that are currently or will receive wastewater service via septic tank systems.
- 8. Johnson and Diversified will file a Termination of Water Service Tariff, substantially in the form attached hereto, that will permit Diversified to assist Johnson in collection of delinquent wastewater billings to Johnson's wastewater-only customers who also

receive water service from Diversified. Diversified will assist Johnson in identifying customers within the existing and proposed CC&N areas of Diversified for wastewater service requirements. The Termination of Water Service Tariff will apply to existing and proposed Diversified CC&N areas. Johnson and Diversified agree to work jointly to ensure that each company collects its appropriate Commission approved reconnection charge for every water service and sewer terminated under the appropriate tariffs, due from the customer so terminated. Johnson and Diversified agree to forward or compensate the other Company for reconnection charges that are due the other company.

- 9. Johnson and Diversified will, now and in the future, cooperate with each other in all regulatory and operating aspects as may reasonably be requested by the other for the purposes of implementing this Agreement.
- 10. Neither party shall acquire any wells within the Planning Area or existing water CC&N service area of the other without the written permission of the other, which permission shall be at the sole discretion of the party with the Planning Area or existing water CC&N service area.
- 11. Neither party, including their owners, members, directors and officers or their agents, shall promote, organize, encourage or participate in a county improvement district or like governmental entity attempting to provide utility services within the service area or Planning Area of the effected party currently provided by the effected party.
- 12. The term of this Agreement shall be for a thirty (30) year period and shall be renewed automatically for up to ten successive five (5) year terms unless terminated prior to the start of the five year term by providing written notice of termination to the other Company.
- 13. This Agreement shall be binding upon and inure to the benefit of the parties and their respective successors in interest and permitted assigns.
- 14. This Agreement shall not be construed as creating a joint venture, partnership, or any other cooperative or joint arrangement between the Companies, and it shall be construed liberally to fulfill its purpose.
- 15. In the event suit is brought or an attorney is retained by either Company to this Agreement to enforce the terms of this Agreement or to collect money damages for breach hereof, the prevailing party shall be entitled to recover, in addition to any other remedy, reimbursement for reasonable attorneys' fees, court costs, costs of investigation and other related expenses incurred in connection therewith.
- 16. Nothing herein shall be deemed an attempt to modify an Order, Decision, Tariff, rule or regulation of the Arizona Corporation Commission, but this Agreement does constitute the mutual commitment of Diversified and Johnson to work together and obtain Orders, Decisions, Tariffs, rules and/or regulations that are consistent with this Agreement.

- 17. In the event that any provision of this Agreement is waived at any time or times by either party or is rendered invalid or unenforceable by any court of competent jurisdiction, such waiver shall not be deemed a waiver of any other provision of this Agreement or a waiver for any other time or times and no such holding shall invalidate or render unenforceable any other provision hereof. Waiver of a provision related, by its terms, to a specific act of either party, or to a specific event, shall not be deemed to be a waiver of any other acts or events contemplated by such provision.
- 18. This Agreement constitutes the entire Agreement between the parties. All prior agreements between the parties related to the subject matter of this Agreement made either orally or in writing shall be deemed to be superseded hereby.

If the above properly and completely states the agreement between the Companies regarding operations within the respective Planning Areas, please acknowledge both copies of this Letter of Understanding, Cooperation, and Settlement as indicated below and return one to me. In executing this letter, the undersigned represent and warrant that they are fully authorized to enter into this Agreement and to bind the Company, its officers, directors, employees and agents to the terms and conditions set forth above.

We are looking forward to working cooperatively with your Company for the benefit of all of our customers and the community at-large.

Sincerely,

Johnson Utilities, L.L.C.

Brian P. Tompsett, P.E.

Executive Vice President,

Mr. Scott Gray June 20, 2005 Page 6

#### ACKNOWLEDGED AND AGREED:

I hereby acknowledge and agree that this Letter of Mutual Understanding, Cooperation and Settlement properly represents the Agreement between the parties.

Diversified Water Utilities, Inc.

By:

Scott W. Gray, President

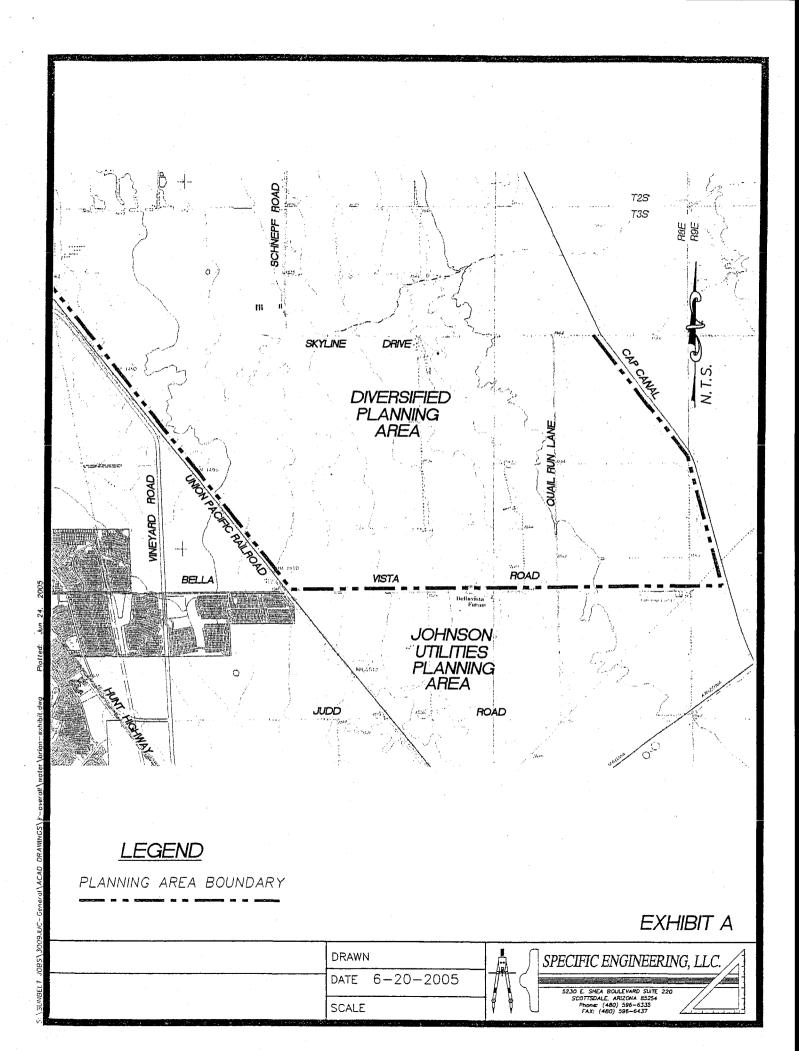
Dated:

Enclosures

cc:

William P. Sullivan

Richard L. Sallquist



#### DIVERSIFIED WATER UTILITIES, INC. TARIFF REVISIONS

TERMINATION OF WATER SERVICE FOR NON-PAYMENT OF WASTEWATER BILL

I. Company customers who also receive wastewater service from Johnson Utilities Company ("JUC") are hereby notified that the Companies have been authorized by the Commission that in the event the wastewater bill of JUC is not paid in a timely fashion, and following notice by both Companies, the water service from Diversified may be terminated. Water service will not be restored until the customer pays to JUC the delinquent balance, plus all-Reconnection of Service and Deposit Requirements pursuant to the JUC Tariff, and the payment to the Company of the applicable Reconnection of Service charges pursuant to the Company's Tariff. Please see the JUC Tariff in this regard.

Renumber to conform——

## JOHNSON UTILITIES L.L.C. dba JOHNSON UTILITIES COMPANY TARIFF REVISION

PART FOUR- SECTION III. TERMINATION OF WATER SERVICE FOR NON-PAYMENT OF WASTEWATER BILL

III. Those Company customers who also receive water service from either H2O, Inc.("H2O") or Diversified Water Utilities, Inc ("Diversified") are hereby notified that the Companies have been authorized by the Commission that in the event the wastewater bill of the Company is not paid in a timely fashion, and following notice by both Companies, the water service from H2O or Diversified may be terminated. Water service will not be restored until the customer pays to the Company the delinquent balance, plus all Reconnection of Service and Deposit Requirements pursuant to PART THREE, SECTION III of this Tariff, and the payment to H2O or Diversified of the applicable H2O or Diversified Reconnection of Service charges. Please see the H2O or Diversified Tariff, as applicable, in this regard.

Renumber to conform



Richard L. Sallquist
Sallquist & Drummond, P.C.

4500 South Lakeshore Drive
Suite 339

Tempe, Arizona 85282
Phone: (480) 839-5202

Fax: (480) 345-0412

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### RECEIVED

2005 JUN 20 P 3: 33

AZ CORP COMMISSION DOCUMENT CONTROL

#### BEFORE THE ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE APPLICATION ) DOO OF JOHNSON UTILITIES COMPANY FOR ) AN EXTENSION OF ITS CERTIFICATE ) OF CONVENIENCE AND NECESSITY ) FOR WATER SERVICE.

DOCKET NO. WS-02987A-05-0088

### OBJECTIONS TO STAFF REPORT

- 1. On April 12, 2005, Administrative Law Judge Nodes issued a Procedural Order in the subject Docket requiring, among other things, that any Objections to the Staff Report dated June 6, 2005 by Johnson Utilities Company ("Johnson" or the Company") be filed on or before June 20, 2005. The Company herewith files its Objections to that Report.
- 2. The Company does not object to the standard conditions included in Certificate of Convenience and Necessity Decisions issued by the Commission that are relevant to the Application. However, the extraordinary and irrelevant conditions recommended by Staff in this proceeding are objectionable.
- The Company provides its objections to the Staff Report's, findings, conclusions and recommendations in the sequence set forth in the Executive Summary.
  - a) The Company does have adequate water production and storage facilities to serve the existing and proposed Certificate of Convenience and Necessity ("CC&N") area. (Executive Summary, Page 1)

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- i) The existing wells are adequate in both number and size to serve the area, and new and additional wells will be timely operating and permitted to serve the expansion area. (Pages 2-6)
- ii) Staff bases its facilities requirements conclusion on an incorrect analysis of the data (Page 6)
- iii) The Staff's "test" of adequacy is without support. (Page 6)
- Preliminary is not needed for an existing and substantial company like

  Johnson. That procedure unduly burdens the Company and the

  Developers of the property.
- c) Recommendations 2 and 10. Prohibiting construction until after the issuance of a "Final Order" unnecessarily restricts the development of the property and creates the "chicken and egg" dilemma that A.R.S. § 40-282(D) was specifically designed to avoid.
- d) Recommendation 3. The proposed "demonstration" to the Director of the Utilities Division is not a "franchise or permit" as contemplated by A.R.S. § 40-282(D). The Company will certainly file the Arizona Department of Environmental Quality approvals as required.
- e) Recommendation 4. The Designation of Assured Water Supply cannot be obtained without a <u>full</u> CC&N. The Company annually updates its "Service Area Map" with the Arizona Department of Water Resources ("ADWR") as required by statute, which Service Area must be <u>within</u> the Company's authorized CC&N area. Both Service Areas and Designations

f)

g)

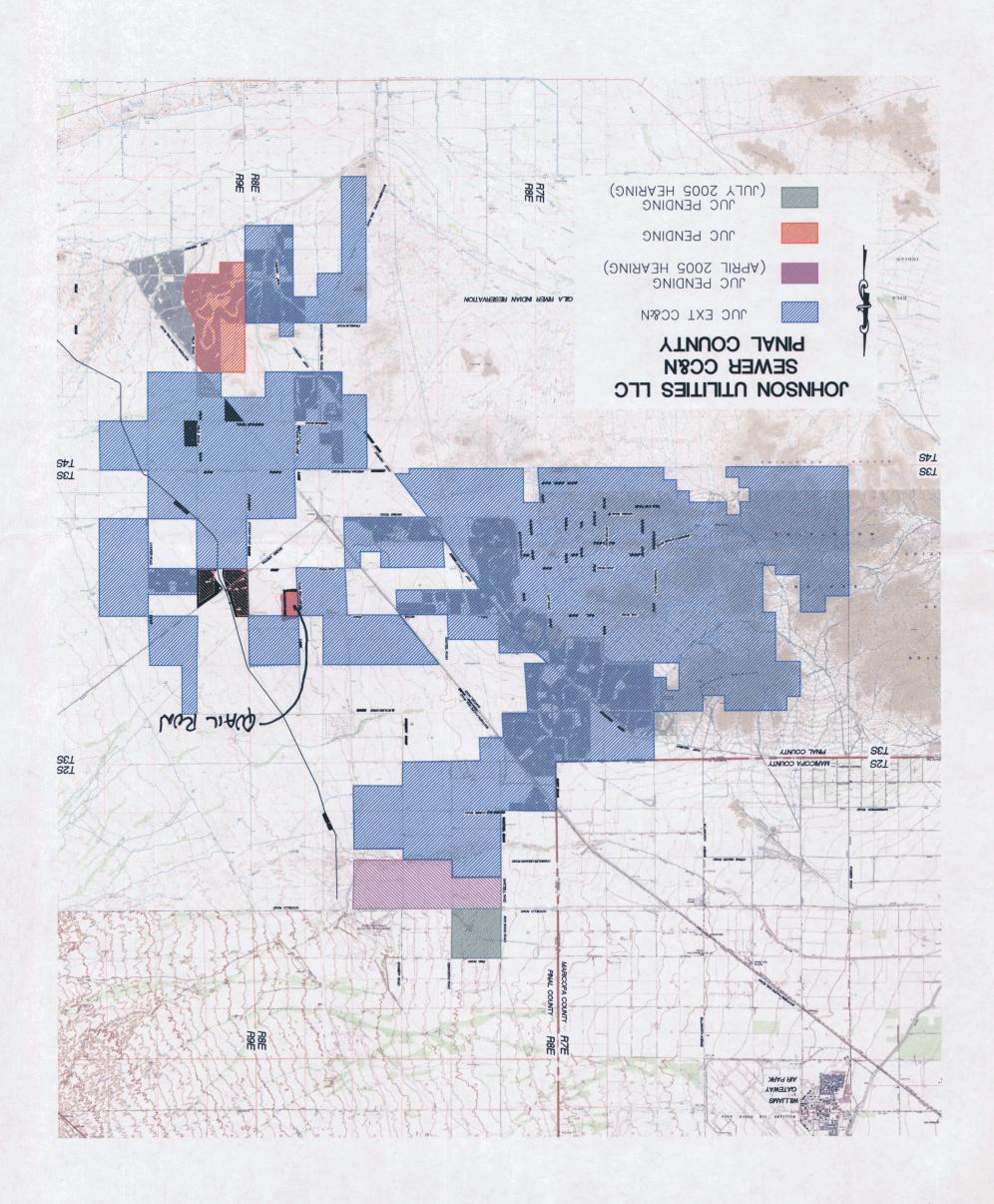
are available only for certificated areas and companies. The Designation is then automatically amended to include the expanded CC&N area. Again, the Order Preliminary dilemma applies. The Company does not object to filing the confirming documentation from ADWR with the Commission.

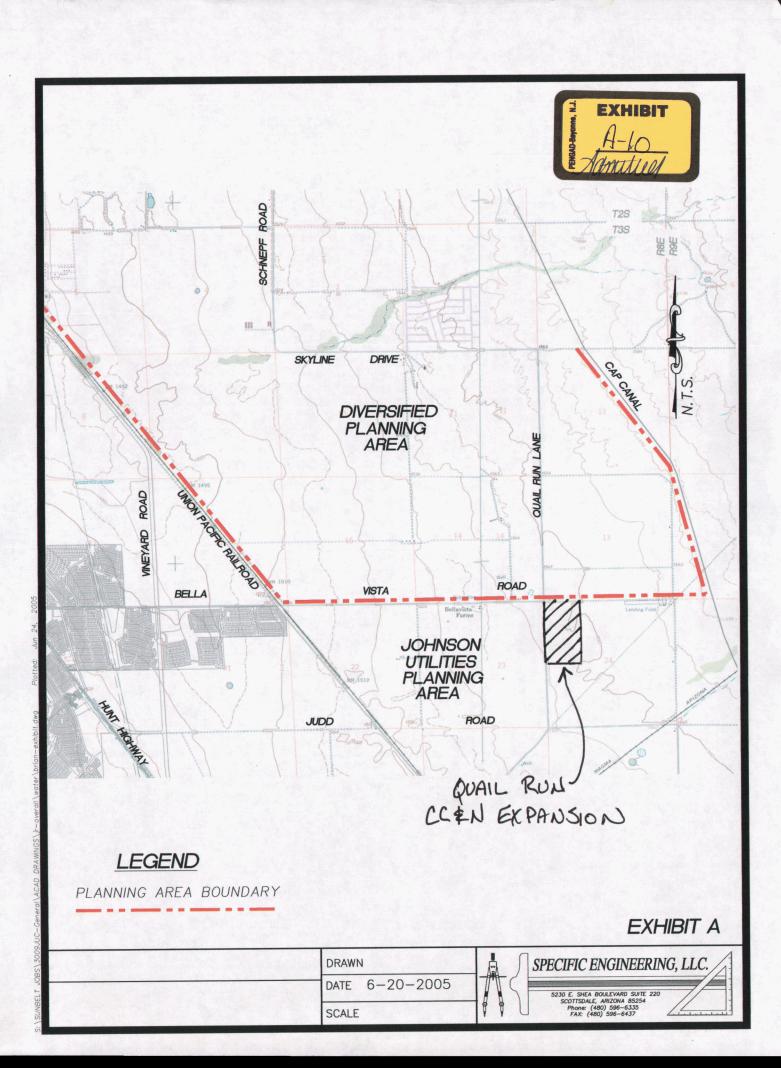
- Recommendations 7. The Commission's Rules and Regulations require the filing of Water Line Extension Agreements for appropriate Staff review and approval. Those Rules do not require that Wastewater Agreements be filed. The Recommendation is therefore objectionable to that extent.
  - Recommendation 11. The alleged "discrepancies" identified as Items 1 through 7 do not relate to this Application or a rate proceeding. Discrepancy 8 is not a justification for the Recommendation, lest every company that exceeds its first year-end customer base warrants such a required review. The Company has complied with Decision No. 60223, dated May 27, 1997 and timely filed the required three-year "rate review", which filing did not support a full rate proceeding. There are no relevant factual allegations, even if true (which the Company does not concede), that support the Recommendation. The alternative Recommendation of a Hook-up Fee audit is certainly a procedure available to the Commission, but is not warranted at this time. The required annual Hook-Up Fee Report was filed with the Commission in January 2005.

1	h) Recommendation 12. The subject litigation has no relevance to the
2	Company in this proceeding.
3	i) Recommendation 13. The Affiliated Interests Rules of the Commission
4	apply only to Class A Utilities, which Johnson is not. The Company will
5	agree to provide the information stipulated to in the March 11, 2005
6	pleading filed by the Company in Docket No. WS-02987A-04-0889.
7	The Company respectfully requests that the Staff modify its Staff Report dated June 6,
8	2005 to be consistent with the Company's Objections thereto.
9	RESPECTFULLY submitted this 2005.
10	SALLQUIST & DRUMMOND, P.C.
11	By: \\ \( \( \) \\ \( \)
12	Richard L. Sallquist 4500 South Lakeshore Drive, Suite 339
13	Tempe, Arizona 85282 Phone: (480) 839-5202
14	Fax: (480) 345-0412
15	Original and fifteen copies of the
16	foregoing filed this \( \begin{aligned} \lambda \\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
17	Docket Control
18	Arizona Corporation Commission 1200 West Washington
19	Phoenix, Arizona 85007
20	A copy of the foregoing mailed/hand delivered this
21	day of June 2005, to:
22	Hearing Division Arizona Corporation Commission
23	1200 West Washington Phoenix, Arizona 85007

1	Utilities Division Arizona Corporation Commission
2	1200 West Washington Phoenix, Arizona 85007
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4	Legal Division Arizona Corporation Commission 1200 West Washington
5	Phoenix, Arizona 85007
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DOCKET U-2987

**ORIGINAL** 

Sheet No.10a

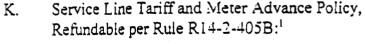
Cancelling Sheet No. 10

Applies to all WATER service areas

#### PART ONE

#### STATEMENT OF CHARGES WATER SERVICE





5/8" x 3/4" Meter		\$ 365.00
3/4" Meter		405.00
1" Meter		455.00
1 1/2" Meter		665.00
2" Meter		1,080.00
3" Meter	1	2,190.00
4" Compound Meter		2,985.00
6" Compound Meter		5,780.00
		•

L. Main Extension Tariff, per Rule R14-2-406B, except that refunds shall be based upon five percent (5%) of the gross revenues from bonafide customers, until all advances are fully refunded to the Developer.

#### M. OFF-SITE FACILITIES HOOK-UP FEE -- WATER

i. Applicable to: In addition to the Meter Installation Charge and requirements for on-site facilities to be installed pursuant to approved main extension agreements, the following Off-site Facilities Hook-up Fee is applicable to all new service connections requiring a main extension agreement.

Issued June 16, 2000

Effective June 16, 2000

Cost<sup>2</sup>

ISSUED BY:

George H. Johnson, Managing Member
Johnson Utilities Company
5320 E. Shea Blvd.
Scottsdale, AZ 85254

APPROVED FOR FILING
DECISION #: 62284

<sup>&</sup>lt;sup>1</sup> The customer shall be the owner of and be responsible for the design, installation, maintenance and operation of the Service Line on the customer's side of the water meter.

<sup>&</sup>lt;sup>2</sup> See Sheet No. 14.

## JOHNSON UTILITIES, L.L.C. dba Johnson Utilities Company

**404 001** 

DOCKET U-2987

## **ORIGINAL**

Sheet No.11a

Cancelling Sheet No. 11

Applies to all WATER service areas

#### PART ONE

## STATEMENT OF CHARGES WATER SERVICE

2. <u>Purpose</u>: To equitably apportion the costs of off-site water facility development among all new service connections.

#### 3. Definitions:

"Applicant" means any party entering into an agreement with Company for the installation of water facilities to serve new service connections.

"Company" means Johnson Utility Company.

"Main extension agreement" means any agreement whereby an applicant agrees to advance the costs of the installation of water facilities to Company to serve new service connections, or install water facilities to serve new service connections and transfer ownership of such water facilities to Company, which agreement shall require the approval of the Arizona Corporation Commission. Same as "line extension agreement".

"Off-site facilities" means wells, storage tanks and related appurtenance necessary for proper operation, including engineering and design costs. Offsite facilities may also include booster pumps, pressure tanks, transmission mains and related appurtenances necessary for proper operation if these facilities are not for the exclusive use of applicant.

"Service Connection" means and includes all service connections for single-family residential or other uses, regardless of meter size.

Issued June 16, 2000

Effective June 16, 2000

ISSUED BY:

George H. Johnson, Managing Member Johnson Utilities Company 5320 E. Shea Blvd. Scottsdale, AZ 85254

APPROVED FOR FILING

#### JOHNSON UTILITIES, L.L.C.

dba Johnson Utilities Company

DOCKET U-2987

## ORIGINAL

Sheet No.12a

Cancelling Sheet No. 12

#### Applies to all WATER service areas

#### PART ONE

#### STATEMENT OF CHARGES WATER SERVICE

4. Off-site Facilities Hook-up Fee: Each new service connection shall pay the total Off-site Facilities Hook-up Fee derived from the following table:

5/8" x 3/4" Meter		\$ 750.00
3/4" Meter		900.00
1" Meter		1,500.00
1-1/2" Meter		3,000.00
2" Meter		4,800.00
3" Meter		9,000.00
4" Meter		15,000.00
6" or greater		30,000.00

#### 5. Terms and Conditions:

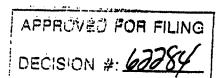
A. Time of payment: In addition to the amounts to be advanced pursuant to an Arizona Corporation Commission approved main extension agreement, the applicant for new water services shall pay the Company the Off-site Facilities Hook-up Fee as determined by meter size and number of connections to be installed pursuant to the main extension agreement. Payment of the Off-site Facilities Hook-up Fee shall normally be made at the time of payment of the main extension agreement or prior to commencement of construction of the water facilities to be installed by applicant pursuant to the main extension agreement. However, in the event a Developer requests the Company commit to service to units within a master planned development for which main extension agreements have not been executed as of the date of such commitment, then and in that event, the Company and Developer shall enter an agreement scheduling payment of hook-up fees to insure that the Company is able to complete construction of the required facilities prior to necessity for service to the Development.

Issued June 16, 2000

Effective June 16, 2000

ISSUED BY:

George H. Johnson, Managing Member Johnson Utilities Company 5320 E. Shea Blvd. Scottsdale, AZ 85254



DOCKET U-2987

## ORIGINAL Cancelling Sheet No.

#### Applies to all WATER service areas

#### PART ONE

#### STATEMENT OF CHARGES WATER SERVICE

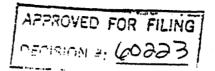
- B. Off-site Facilities Hook-up Fee Non-refundable: The base fee amounts collected by the Company pursuant to the Off-site Facilities Hook-up Fees shall be non-refundable advances in aid of construction.
- C. Trust Account: All funds collected by the Company as Off-site Facilities Hook-up Fees shall be deposited into a separate interest bearing trust account and used solely for the purpose of paying for the costs of off-site facilities, including repayment of loans obtained for the installation of off-site facilities.
- D. Disposition of Excess Funds: After all necessary and desirable off-site facilities are constructed utilizing funds collected pursuant to the Offsite Facilities Hook-up Fee or the Off-site Facilities Hook-up Fee has been terminated by order of Arizona Corporation Commission, any funds remaining in the trust account shall be refunded. The manner of the refund shall be determined by the Commission at the time of refund becomes necessary.

Issued May 30, 1997

Effective June 30, 1997

ISSUED BY:

George H. Johnson. Managing Member Johnson Utilities Company 5320 E. Shea Blvd. Scottsdale, AZ 85254



DOCKET U-2987

ORIGINAL

Cancelling Sheet No. 21

Sheet No.21a

Applies to all WASTEWATER service areas

#### PART THREE

## STATEMENT OF CHARGES WASTEWATER SERVICE

F. Late Payment, Per Month, per Rule R14-2-608F

1.5%3.4

G. Service Line Connection Charge<sup>5</sup>

\$ 350.00

H. Main Extension Tariff, per Rule R14-2-606B, except that refunds shall be based upon five percent (5%) of the gross revenues from bonafide customers, until all advances are fully refunded to the Developer.

Cost<sup>5</sup>

#### I. Off-Site Facilities Hook-up Fee-Wastewater

1. <u>Applicable to:</u> In addition to any other Arizona Corporation Commission approved charges and requirements for on-site facilities to be installed pursuant to main extension agreements, the following Off-site Facilities Hook-up Fee is applicable to all new service connections requiring a main extension agreement.

Issued June 16, 2000

Effective June 16, 2000

ISSUED BY:

George H. Johnson, Managing Member Johnson Utilities Company 5320 E. Shea Blvd. Scottsdale, AZ 85254

APPROVED FOR FILING

<sup>&</sup>lt;sup>3</sup> Bills for utility services are due and payable when rendered. Any payment not received within fifteen (15) days from the date the bill was rendered shall be considered delinquent and subject to the termination policy set forth in the Company's rate tariff. All late payment penalties shall be billed on the customer's next regularly scheduled billing. If the customer fails to pay the late payment penalty by the due date on the next billing, the customer will receive a ten (10) day termination notice. If the customer does not pay the late payment penalty by that date the service will be terminated. Service shall be terminated only for that service for which the customer is delinquent or in violation. All customers whose service is terminated for failure to pay the late payment penalty are subject to the Company's reconnection charge set forth in the Company's tariff.

<sup>4</sup> This charge shall not apply if the customer has arranged for a Deferred Payment Plan.

The Company shall install and own the Service Line up to the customer's property line. The customer shall install and own the Service Line beyond that point. The customer shall maintain and operate the service line from the connection to the main line in the street or right-of-way to its interconnection with the customer's building or facility.

6 See Sheet No. 25.

#### JOHNSON UTILITIES, L.L.C.

dba Johnson Utilities Company

DOCKET U-2987

## **ORIGINAL**

Sheet No.22a

Cancelling Sheet No. 22

#### Applies to all WASTEWATER service areas

#### PART THREE

### STATEMENT OF CHARGES WASTEWATER SERVICE

2. <u>Purpose</u>: To equitably apportion the costs of off-site wastewater facility development among all new service connections.

#### 3. Definitions:

"Applicant" means any party entering into an agreement with Company for the installation of wastewater facilities to serve new service connections.

"Company" means Johnson Utility Company.

"Main extension agreement" means any agreement whereby an applicant agrees to advance the costs of the installation of wastewater facilities to Company to serve new service connections, or install water facilities to serve new service connections and transfer ownership of such wastewater facilities to Company.

"Off-site facilities" means treatment plant, sludge disposal facilities, effluent disposal facilities and related appurtenance necessary for proper operation, including engineering and design costs. Offsite facilities may also include lifts stations, force mains, trunk collection mains and related appurtenances necessary for proper operation if these facilities are not for the exclusive use of applicant.

"Service Connection" means and includes all service connections for single-family residential or other uses, regardless of service lateral size.

Issued June 16, 2000

Effective June 16, 2000

ISSUED BY:

George H. Johnson, Managing Member Johnson Utilities Company 5320 E. Shea Blvd. Scottsdale, AZ 85254

APPROVED FOR FILING

#### JOHNSON UTILITIES, L.L.C.

dba Johnson Utilities Company

DOCKET U-2987

## **ORIGINAL**

Sheet No.23a

Cancelling Sheet No. 23

#### Applies to all WASTEWATER service areas

#### PART THREE

## STATEMENT OF CHARGES WASTEWATER SERVICE

4. Off-site Facilities Hook-up Fee: Each new service connection shall pay the total Off-site Facilities Hook-up Fee derived from the following table:

Service Lateral Size		<u>Total Fee</u>
4"		\$ 1,000.00
6"		2,000.00
8" or greater	:	4,000.00

#### 5. Terms and Conditions:

A. Time of payment: In addition to the amounts to be advanced pursuant to a main extension agreement, the applicant for new wastewater services shall pay the Company the Off-site Facilities Hook-up Fee as determined by service lateral size and number of connections to be installed pursuant to the main extension agreement. Payment of the Off-site Facilities Hook-up Fee shall normally be made at the time of payment of the main extension agreement or prior to commencement of construction of the wastewater facilities to be installed by applicant pursuant to the main extension agreement. However, in the event a Developer requests the Company commit to service to units within a master planned development for which main extension agreements have not been executed as of the date of such commitment, then and in that event, the Company and Developer shall enter an agreement scheduling payment of hook-up fees to insure that the Company is able to complete construction of the required facilities prior to necessity for service to the Development.

Issued June 16, 2000

Effective June 16, 2000

ISSUED BY:

George H. Johnson, Managing Member Johnson Utilities Company 5320 E. Shea Blvd. Scottsdale, AZ 85254

APPROVED FOR FILING

dba Johnson Utilities Company

ORIGINAL

DOCKET U-2987

Cancelling Sheet No. 24

#### Applies to all WASTEWATER service areas

#### PART THREE

#### STATEMENT OF CHARGES WASTEWATER SERVICE

- B. Off-site Facilities Hook-up Fee Non-refundable: The base fee amounts collected by the Company pursuant to the Off-site Facilities Hook-up Fees shall be non-refundable advances in aid of construction.
- C. Trust Account: All funds collected by the Company as Off-site Facilities Hook-up Fees shall be deposited into a separate interest bearing trust account and used solely for the purpose of paying for the costs of off-site facilities, including repayment of loans obtained for the installation of off-site facilities.
- D. Disposition of Excess Funds: After all necessary and desirable off-site facilities are constructed utilizing funds collected pursuant to the Offsite Facilities Hook-up Fee or the Off-site Facilities Hook-up Fee has been terminated by order of Arizona Corporation Commission, any funds remaining in the trust account shall be refunded. The manner of the refund shall be determined by the Commission at the time of refund becomes necessary.

Issued June 16, 2000

Effective June 16, 2000

ISSUED BY:

George H. Johnson, Managing Member Johnson Utilities Company 5320 E. Shea Blvd. Scottsdale, AZ 85254

APPROVED FOR FILING

David

#### **MEMORANDUM**

RECEIVLL

2005 JUN -Ь Р 2: 32

AZ CORP COMMISSION DOCUMENT CONTROL

TO:

Docket Control

Arizona Corporation Commission

FROM:

Ernest G. Johnson

for D

Director Utilities Division

Date:

June 6, 2005

RE:

STAFF REPORT FOR JOHNSON UTILITIES COMPANY, L.L.C. – APPLICATION FOR EXTENSION OF ITS CERTIFICATES OF CONVENIENCE AND NECESSITY TO PROVIDE WATER AND

WASTEWATER SERVICES (DOCKET NO. WS-02987A-05-0088)

Attached is the Staff Report for Johnson Utilities Company, L.L.C. application for extension of its existing Certificate of Convenience and Necessity for water and wastewater services. Staff is recommending that the Commission issue an Order Preliminary.

EGJ:BNC:red

Originator: Blessing Chukwu

Attachment: Original and 13 Copies

RECEIVED

JUN 0 6 2005

ARIZ. CORPORATION COMMISSION

Service List for: Johnson Utilities Company, L.L.C. Docket No. WS-02987A-05-0088

Mr. Brian Tompsett Johnson Utilities Company, L.L.C. 5230 East Shea Boulevard, Suite 200 Scottsdale, Arizona 85254

Mr. Richard Sallquist, Esq. Sallquist & Drummond, P.C. 4500 S. Lake shore Dr., , Suite 339 Tempe, Arizona 85282

Mr. Christopher C. Kempley Chief, Legal Division Arizona Corporation Commission 1200 West Washington Street Phoenix, Arizona 85007

Mr. Ernest G. Johnson Director, Utilities Division Arizona Corporation Commission 1200 West Washington Street Phoenix, Arizona 85007

Ms. Lyn Farmer Chief, Hearing Division Arizona Corporation Commission 1200 West Washington Street Phoenix, Arizona 85007

## STAFF REPORT UTILITIES DIVISION ARIZONA CORPORATION COMMISSION

JOHNSON UTILITIES COMPANY, L.L.C.

DOCKET NO. WS-02987A-05-0088

APPLICATION FOR EXTENSION
OF EXISTING CERTIFICATE OF
CONVENIENCE AND NECESSITY TO PROVIVE
WATER AND WASTEWATER SERVICES

JUNE 2005

#### STAFF ACKNOWLEDGMENT

The Staff Report for Johnson Utilities Company, L.L.C. (Docket No. WS-02987A-05-0088) was the responsibility of the Staff members signed below. Blessing Chukwu was responsible for the review and analysis of the Company's application. John Chelus was responsible for the engineering and technical analysis.

Blessing Chukwu Executive Consultant

John Chelus Utilities Engineer

# EXECUTIVE SUMMARY JOHNSON UTILITIES COMPANY, L.L.C. APPLICATION FOR EXTENSION OF CERTIFICATE OF CONVENIENCE AND NECESSITY DOCKET NO. WS-02987A-05-0088

On February 11, 2005, Johnson Utilities Company, L.L.C. ("Johnson Utilities" or "Company") filed an application with the Arizona Corporation Commission ("ACC" or "Commission") for an extension of its Certificate of Convenience and Necessity ("CC&N") to provide wastewater and water services to a development known as Quail Run, in Pinal County, Arizona. On April 7, 2005, Staff filed a Sufficiency Letter indicating that the application had met the sufficiency requirements of Arizona Administrative Code.

Johnson Utilities is an Arizona Limited Liability Company, in good standing, and engaged in providing wastewater and water utility services in portions of Pinal County, Arizona. The original CC&N for the Company was granted by the Commission in Decision No. 60223 (May 27, 1997), and subsequently extended by Decision Nos. 61069 (August 7, 1998), 62087 (November 19, 1999), 63960 (September 4, 2001), and 64062 (October 4, 2001). According to the Company's Annual Report for the year ending December 31, 2004, the Company has wastewater and water utility plant in service of approximately \$19 million and \$22 million, respectively.

By this application, the Company is seeking Commission authority to extend its service territory to include approximately 0.16 square miles or 100 acres. The proposed extension area is contiguous to Johnson Utilities' current wastewater CC&N on its northern and western borders and is designed to contain approximately 351 residential lots.

Based on the information provided in this docket and from Staff's review of other available materials regarding the Company, Staff concludes: (1) that the existing Johnson Utilities water system does not have adequate production and storage capacity to serve the existing and proposed CC&N area; and (2) that the proposed wastewater system has or can reasonably be expected to develop the necessary sewage treatment capacity to serve the proposed CC&N extension area for Quail Run.

Johnson Utilities is in compliance with the Arizona Department of Environmental Quality ("ADEQ"), the Commission, and the Arizona Department of Water Resources ("ADWR").

If the Commission chooses to grant Johnson Utilities' application for an extension of its CC&N to provide wastewater and water services to Quail Run, Staff recommends the following:

1. That the Commission issue, pursuant to A.R.S. §40-282(D), an "Order Preliminary" to the issuance of the ultimate CC&N extension to Johnson Utilities.

- 2. Staff further recommends that Johnson Utilities shall not construct any water distribution mains or wastewater collection mains within the CC&N extension area defined by this docket, nor shall Johnson Utilities provide any water or wastewater services within the CC&N extension area defined by this docket until and after the issuance of a subsequent "Final Order" of the Commission in this Docket.
- 3. That Johnson Utilities be required to demonstrate to the satisfaction of the Director of Utilities that the Company can meet the water production needs in PWS No. 11-128 for its current customer base at the time of the demonstration. Johnson Utilities shall also demonstrate to the satisfaction of the Director of Utilities that it can continue to develop water production resources to meet the system needs within a reasonable foreseeable future. Both of the above can be demonstrated by submitting a list of pending or future wells, their anticipated production capacity in gallons per minute, and a time schedule for ADEQ approval of construction and operation.
- 4. That Johnson Utilities be required to update or amend its Designation of Assured Water Supply to include the service area in this CC&N extension application. Johnson Utilities shall file with Docket Control under this same docket number the amended Designation of Assured Water Supply, stating that there is adequate water supply, where applicable or when required by statute.
- 5. That Johnson Utilities be required to docket its well data with Docket Control showing arsenic concentrations for all existing and pending wells.
- 6. That Johnson Utilities be required to docket an arsenic plan with Docket Control if the water quality from any of its wells has an arsenic level of 10 parts per billion or more.
- 7. That Johnson Utilities file with Docket Control, for Staff review and/or approval, a copy of the fully executed main extension agreements for wastewater and water facilities for Quail Run.
- 8. That Johnson Utilities file with Docket Control the Unified (Aquifer Protection) Water Quality Permits issued by the ADEQ for the Copper Basin Regional Wastewater Treatment Facility.
- 9. That Johnson Utilities be required to file with Docket Control copies of the ADEQ "Approvals to Construct" for the requested extension area for Quail Run.
- 10. That Johnson Utilities be required to comply with items 3, 4, 5, 6, 7, 8, and 9 above within 2 years of the effective date of the Order Preliminary. If Johnson Utilities complies with these items within the 2 year time-frame, it shall be required to file a motion within 2 years of the effective of the Order Preliminary to have the Commission issue its final CC&N decision. If Johnson Utilities fails to meet the 2 year time-frame, it shall be required to submit a new CC&N application if it still desires to serve Quail Run.

- 11. That Johnson Utilities be required to submit a full rate case filing for both the water and wastewater divisions using a 2005 test year no later than April 30, 2006. As an alternative, it is recommended that the Commission order Staff to perform an audit of the Johnson Utilities Hook-up Fee Account within three months of a Decision in this matter and come back to the Commission with appropriate recommendations.
- 12. That Johnson Utilities Company be required to file a quarterly report with the Compliance Section on the status of the pending litigation in CV2005-002692.
- 13. That Johnson Utilities be required to file Affiliate Interest reports as required under Arizona Administrative Code R14-2-801 et al.

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#### Introduction

On February 11, 2005, Johnson Utilities Company, L.L.C. ("Johnson Utilities" or "Company") filed an application with the Arizona Corporation Commission ("ACC" or "Commission") for an extension of its Certificate of Convenience and Necessity ("CC&N") to provide wastewater and water services to a development known as Quail Run, in Pinal County, Arizona.

On March 10, 2005, the ACC Utilities Division ("Staff") filed an Insufficiency Letter, indicating that the Company's application did not meet the sufficiency requirements of Arizona Administrative Code ("A.A.C.") R14-2-402(C) and R14-2-602(B). A copy of the Insufficiency Letter was sent to the Company via U.S. mail. In the Letter, Staff listed the deficiencies that need to be cured for administrative purposes.

On March 28, 2005, the Utilities provided additional documentation to support its relief requested.

On April 7, 2005, Staff filed a Sufficiency Letter indicating that the application had met the sufficiency requirements of A.A.C.

#### Background

Johnson Utilities is an Arizona Limited Liability Company, in good standing, and engaged in providing wastewater and water utility services in portions of Pinal County, Arizona. The Company currently serves approximately 8,500 wastewater and water utility customers, which includes both residential and commercial customers. The original CC&N for the Company was granted by the Commission in Decision No. 60223 (May 27, 1997), and subsequently extended by Decision Nos. 61069 (August 7, 1998), 62087 (November 19, 1999), 63960 (September 4, 2001), and 64062 (October 4, 2001).

According to the Company's Annual Report for the year ending December 31, 2004, the Company has wastewater and water utility plant in service of approximately \$19 million and \$22 million, respectively. The Company reported an annual revenue of approximately \$2.7 million for wastewater and \$4.9 million for water for year 2004. Johnson Utilities reported long term debt of \$772,000 for water. No long term debt was reported for wastewater.

#### The Extension Request

Johnson Utilities is currently certificated by the Commission to provide wastewater and water services to various portions of Pinal County, Arizona. By this application, the Company is seeking Commission authority to extend its service territory to include a development known as Quail Run. Quail Run will add approximately 0.16 square miles or 100 acres to Johnson Utilities' existing CC&N for wastewater and water services. Quail Run is designed to contain approximately 351 residential lots. The Company anticipates full build out within five years.

Quail Run is located at the southeast corner of Bella Vista Road and Quail Run Road, in a portion of Section 24, Township 3 South, Range 8 East and is contiguous to Johnson Utilities' current wastewater CC&N on its northern and western borders. The Section that Quail Run is located, is bordered on the east by Sonoran Villages. Sonoran Villages, a planned area development, was one of the subjects of the CC&N extension request by Johnson Utilities in Docket No. WS-02987A-04-0288.

#### The Wastewater System

Pursuant to Section 208 of the Federal Water Pollution Control Act, Central Arizona Association of Governments ("CAAG") is the designated water quality planning agency for the requested CC&N extension area. The CAAG has the authority to develop and approve general wastewater plans which include land development policies, service areas, objectives, principles, and standards for local growth and development.

Quail Run will have an eight inch gravity sewer throughout the development which will be pumped by lift station and force main to the existing Sonoran Villages development lift station located at the northwest corner of Felix and Judd Road. This area is included within the Copper Basin regional wastewater service area and is consistent with the CAAG §208 Water Quality Plan Amendment No. 4 for Johnson Utilities.

The Copper Basin regional facility is a master planned wastewater treatment project which is matched to projected development and population densities. Treatment processes, phasing, and capacities are delineated in the CAAG §208 Plan No 4. The CAAG §208 Plan essentially provides for the construction of a 0.5 Million Gallons per Day ("MGD") treatment plant which will be expandable to 2.5 MGD. Effluent will be reused with any excess being disposed of through an Arizona surface water discharge permit, although it is anticipated that the irrigation needs of green belts and golf courses will be sufficient for the generated effluent. The wastewater treatment plant will be constructed approximately 2 miles east of the Quail Run development on Judd Road.

Staff concludes that the proposed wastewater system has or can reasonably be expected to develop the necessary sewage treatment capacity to serve the proposed CC&N extension area for Quail Run and is consistent with the approved CAAG §208 Water Quality Plan for Johnson Utilities.

#### The Water System

Quail Run will be served by the Johnson Utilities public water system number 11-128. The design report assumed that the Johnson Utilities water system has adequate storage and pumping capacity to meet the needs of this development. Johnson Utilities has in existence seven (7) wells with a total production capacity of 2,870 gal/min, 1,650,000 gallons of storage capacity, booster pumps, pressure tanks, and a distribution system serving approximately 8,500 connections. Based on historical growth rates, it is anticipated that the existing service area

could have a total of 22,000 customers at the end of five years. The Company has predicted an additional 351 customers for the proposed CC&N extension, at the end of five years. The existing production and storage can adequately serve approximately 8,235 connections under peak conditions. This means that Johnson Utilities does not currently have enough capacity to adequately serve its 8,500 existing customers under all conditions.

Staff requested well data, storage data, and water usage data from Johnson Utilities for its existing system in a Data Request dated January 13, 2005. The first response from Johnson Utilities on January 21, 2005, listed seven (7) wells that Johnson Utilities indicated were supplying the Johnson Ranch system (Table 1). These correspond to the wells which the Arizona Department of Water Quality ("ADEQ") considers as approved for use. Based on this data, Staff determined that Johnson Utilities had insufficient well capacity to serve the Johnson Ranch system.

Original List of Active Johnson Utility Wells Connected to PWS ID No. 11-128

1 able 1				
Well Number	Well name	ADEQ Approval to Construct	ADEQ Approval of Construction	Pumping G.P.M.
55-599386	Circle Cross	Nov. 22, 2002	Oct. 22, 2004	890
55-558445	J.R. No. 4	Apr. 21, 1998	May 18, 1999	500
55-559843	J.R. No. 5	Apr. 21, 1998	Jan. 24, 2002	500
55-621462	Skyline	Dec. 4, 2002	Aug. 20, 2003	650
55-582085	Oasis No. 1	Aug. 07, 2002	Dec. 13, 2002	110
55-582087	Oasis No. 2	Aug. 07, 2002	Dec 13, 2002	110
55-582088	Oasis No. 3	Aug. 07, 2002	Dec. 13, 2002	110
Total				2,870 gpm

When Johnson Utilities was made aware of Staff's concerns, Johnson Utilities submitted a letter to Staff dated January 28, 2005. It included a "revised" Water Use Data Sheet for Johnson Utilities Company, System Number 11-128. The letter stated that "The revised "Water Use Data Sheet" now includes all the wells that are connected to the system." The revised well list added JR Well No. 3, JR Well No. 7, and Edwards Well No. 2 as active (Table 2). The Company indicated that the additional wells were not reported originally because they were on standby due to decreased winter demand.

Revised List of Active, Pending and Abandoned Johnson Utility Wells
Connected to PWS ID No. 11-128 – Table 2

Well	Well Name	ADEQ Approval	ADEQ		Status
Number		to Construct	Approval of	GPM	
			Construction		
55-599386	Circle Cross	Nov. 22, 2002	Oct. 22, 2004	890	Active
55-558445	J.R. No. 4	Apr. 21, 1998	May 18, 1999	500	Active
55-559843	J.R. No. 5	Apr. 21, 1998	Jan. 24, 2002	500	Active
55-621462	Skyline	Dec. 4, 2002	Aug. 20, 2003	650	Active
55-582085	Oasis No. 1	Aug. 07, 2002	Dec. 13, 2002	110	Active
55-582087	Oasis No. 2	Aug. 07, 2002	Dec 13, 2002	110	Active
55-582088	Oasis No. 3	Aug. 07, 2002	Dec. 13, 2002	110	Active
55-625916	Circle Cross	n/a			Abandon
55-625918	Circle Cross	n/a			Abandon
55-586189	Edwards Rd. #2	Sep. 20, 2001	Jul 23, 2002	35	Active
55-627105	J.R. No. 3			500	Active
55-562385	J.R. No. 7			900	Active
55-615284	J.R. No. 2			360	Not Conn.
55-201429	Morning Star			800	Pending
55-626147	San Tan No. 1			500	Pending
		1	]	000	D 1:
55-598836	San Tan No. 2			800	Pending

During an inspection of the Johnson Ranch system on February 2, 2005, Staff was shown all of the wells listed as active by Johnson Utilities in the revised January 28, 2005 Water Use Data Sheet. Staff was told during the inspection that the Edwards Well No. 2 was in fact disconnected.

As part of the evaluation of this application, Staff held a meeting with ADEQ about a pending ADEQ inspection report. It was determined from these conversations that the wells inspected on January 14, 2005, by ADEQ corresponded exactly with the original seven wells in Table I. In addition, ADEQ personnel could not locate an "Approval of Construction" (which is essentially an authorization to operate the well) for Johnson Ranch Wells No. 3 and No. 7, and could not locate an "Approval to Construct" for Johnson Ranch Well No. 7. It was then concluded that none of the additional wells listed by Johnson Utilities as active in its revised responses were approved by ADEQ for use on system PWS 11-128.

On February 23, 2005, Johnson filed a response to Staff's Second Data Request. This included a table of current wells in service along with the arsenic concentrations (Table 3). This table included the Johnson Ranch Well No. 7, Johnson Ranch Well No. 3 and Edwards Road Well No. 2, all of which were listed as entering Point of Entry ("POE") Number one.

Johnson Utilities Well Inventory for System 11-128 as of February 2005

Table 3

Well	Well Name	Arsenic Levels	POE	Status
Number		Mg/l		
55-625916	Circle Cross			Abandon
55-625918	Circle Cross			Abandon
55-599386	Circle Cross	0.002	4	Active
55-621462	Skyline	0.003	3	Active
55-586189	Edwards Rd. #2	0.002	1	Active
55-627105	J.R. No. 3	n/a	1	Active
55-558445	J.R. No. 4	0.003	1	Active
55-559843	J.R. No. 5	0.005	1	Active
55-562385	J.R. No. 7	n/a	1	Active
55-615284	J.R. No. 2	n/a	n/a	Not Conn.
55-201429	Morning Star Farms			Pending
55-582085	Oasis No. 1	n/a	2	Active
55-582087	Oasis No. 2	0.003	2	Active
55-582088	Oasis No. 3	0.022	2	Active
55-626147	SanTan No. 1	0.007	1	Pending
55-598836	San Tan No. 2			Pending

On March 29, 2005, Johnson Utilities submitted responses to Staff's fourth set of Data Requests. In the responses, Johnson Utilities listed the Johnson Ranch Well No. 7 as a construction water well, the San Tan Heights Well as a construction water well, the Johnson Ranch Well No. 3 as a Precision Golf Course Well and the Edwards Road No. 2 Well as on-line with a flow of 130 gallons per minute. An Approval to Construct for the San Tan Heights Well No. 2 dated March 24, 2005, was also submitted which indicated a maximum pumping capacity of 710 gpm. There is yet no authorization to operate the San Tan well due to high nitrates. In spite of the submittal, Staff did not see any changes to the well production or water usage that would change its position that the Company does not have an adequate water supply.

Staff had a meeting with Johnson Utilities on April 5, 2005. The meeting was held so that the Company could explain the discrepancies in its data. At the meeting, the Company submitted flow rates for the same wells that were higher than previously submitted which would have the effect of increasing the gallons of water available for customers. In spite of the meeting and another new submittal dated April 5, 2005, Staff did not see any changes to the well production or water usage that would change its conclusion that the Company lacks an adequate water supply.

It was also pointed out to the Company at a meeting on April 5, 2005, that many of the Arizona Department of Water Resources ("ADWR") well numbers used by the Company in its well listings were incorrect and it was difficult for Staff to determine exactly what the Company had submitted. It was also noted that ownership of at least one of the wells (Johnson Ranch No. 7) was listed in ADWR records as belonging to Johnson International, not Johnson Utilities.

This is significant because Johnson International is in litigation with the State Attorney General's Office.

#### Analysis of the Water System

Based on water use data supplied by the Company, Staff calculated that the average daily demand during the peak month was 417 gal/day-service, and estimated that the water demand on the annual peak day would be about 521 gallons/day-service. The Company reported 8,508 actual customers ending December 2004, and recent data shows a growth rate of about 6 percent per month. Using these numbers, the water production necessary to meet the annual peak day, is shown in Table 4. This is the absolute minimum needed and assumes that all wells run 24 hours per day and that no wells are out of service for pump replacement or repairs.

Since the approved wells only produce 2,870 gal/min, it can be seen that presently Johnson Utilities PWS No. 11-128 has insufficient capacity to meet its peak demand, which occurs during the summer.

Johnson Utilities, PWS No. 11-128 Water Demand on Annual Peak day Table 4

Customer Base	Peak Day Demand	Average daily Demand
(Estimated Beyond	(gal/min)	During Peak Month
December)		(gal/min)
8,508	3,078	2,462
9,018	3,262	2,610
9,560	3,459	2,767
10,133	3,666	2,933
10,741	3,886	3,109
11,386	4,119	3,295
12,069	4,367	3,494
	(Estimated Beyond December)  8,508  9,018  9,560  10,133  10,741  11,386	(Estimated Beyond December)     (gal/min)       8,508     3,078       9,018     3,262       9,560     3,459       10,133     3,666       10,741     3,886       11,386     4,119

For the issuance of Certificates of Convenience and Necessity, Staff seeks to answer the question:

"Can the utility now meet the service demands of its existing customer base and the demand of the proposed customer additions, or as an alternative, can it now meet the service demands of its existing customer base and can it be reasonably expected that the utility can develop the future required resources and has the performance history to warrant belief that it will develop the future required resources?"

As a result of Staff analysis, it would appear that Johnson Utilities has not developed water production resources to meet the pace of growth, which casts doubt on the ability of the utility to meet its needs for new service areas.

#### Finance of Utility Facilities

The Company indicated in the application that it will finance the required utility facilities needed to serve the proposed extension area through a combination of advances in aid of construction and hook-up fees in accordance with A.A.C. Advances in aid of construction are often in the form of Main Extension Agreements ("MXAs"). MXAs are standard industry practice. The minimal acceptable criteria for line extension agreements between water and wastewater utilities and private parties are established by A.A.C. R14-2-406 and 606. These agreements generally require the developer to design, construct and install (or cause to be), all facilities to provide adequate service to the development. The developer is required to pay all costs of constructing the required facilities necessary to serve the development. Upon acceptance of the facilities by the Utility Company, the developer conveys the utility facilities through a warranty deed to the Utility Company. Utility Companies will often refund ten (10) percent of the annual water revenue associated with development for a period of ten (10) years. The Commission's rule on wastewater MXAs does not currently require a refund of the advance.

On page 4 of the Application, the Company states that "a copy of a fully executed main extension agreement for water facilities between the parties shall be filed with the Commission in support of this Application when completed." As of May 25, 2005, the Company has not filed a copy of the MXA as indicated in the Application.

Staff therefore recommends that the Company file with Docket Control, for Staff review and/or approval, a copy of the fully executed main extension agreements for wastewater and water facilities.

#### **ACC Compliance**

A check with the Utilities Division Compliance Section showed no outstanding compliance issues.

#### Arizona Department of Environmental Quality Compliance

The ADEQ regulates the water system under ADEQ Public Water System I.D. No. 11-128. ADEQ has determined that this system is currently delivering water that meets water quality standards required by Arizona Administrative Code, Title 18, Chapter 4.

The wastewater treatment plant to serve Quail Run has not yet been constructed. Since this is a proposed utility which have yet to become operational, there is no historical compliance data for the wastewater segment.

#### Arizona Department of Water Resources Compliance

There are five (5) Active Management Areas ("AMAs") in Arizona and each has a different goal depending on the water supply need of the area. Johnson Utilities is located in the

Phoenix AMA, as designated by ADWR. The primary management goal of the Phoenix AMA is to attain "safe-yield" by 2005. Safe-yield is a long-term balance between the annual amount of groundwater withdrawn in the AMA and the annual amount of natural and artificial recharge. As a result, Johnson Utilities is subject to the reporting and conservation rules of ADWR has indicated that the Company is in compliance with the Pinal AMA requirements.

Since Johnson Utilities is located within the Phoenix AMA, Quail Run's developer is required by ADWR to demonstrate an assured water supply that will be physically, legally, and continuously available for the next 100 years before the developer can record plats or sell parcels. The developer can prove a 100 year supply by satisfying the requirements to obtain a Certificate of Assured Water Supply or by a written commitment of service from a provider with a Designation of Assured Water Supply. Presently Johnson Utilities holds a Designation of Assured Water Supply for its existing service area. It is assumed that Johnson Utilities will continue to elect this alternative.

Therefore, Staff recommends that Johnson Utilities be required to update or amend its Designation of Assured Water Supply to include the service area in this CC&N application. Also, Staff recommends that Johnson Utilities file with Docket Control under this same docket number the amended Designation of Assured Water Supply, stating that there is adequate water supply, where applicable or when required by statute.

#### Arsenic

The U.S. Environmental Protection Agency ("EPA") has reduced the arsenic maximum contaminant level ("MCL") in drinking water from 50 micrograms per liter ("µg/l") or parts per billion ("ppb") to 10 µg/l. The date for compliance with the new MCL is January 23, 2006.

Staff requested the arsenic concentration for each well but has not been provided a complete list at the time of the writing of this report. The Company did provide arsenic concentrations for most of the wells and stated that levels would be provided for the remainder of the wells as soon as they are available. All wells except one so far, showed compliance with the new arsenic standard of  $10~\mu g/l$ . Well No. 55-582085, Oasis Well No. 1 has an arsenic concentration of  $22~\mu g/l$ . The Company plans to abandon this well.

Staff recommends that Johnson Utilities be required to file well data with Docket Control showing arsenic concentrations for all existing and pending wells. Staff recommends that Johnson Utilities be required to file an arsenic plan with Docket Control if the water quality from any of its wells has an arsenic level of 10 parts per billion or more.

#### **Curtailment Tariff**

A Curtailment Plan Tariff ("CPT") is an effective tool to allow a water company to manage its resources during periods of shortages due to pump breakdowns, droughts, or other unforeseeable events.

The Company does not have a curtailment tariff on file. This issue is being addressed under Docket No. WS-02987A-04-0288.

#### Offsite Facilities Hook-up Fee Tariff

A review of the 2004 Johnson Utilities Status Report on the Commission approved hookup fees indicates that the Company collected \$6,597,450 in water hook-up fees and \$7,107,500 in wastewater hook-up fees. The Company spent \$1,180,410 of the water hook-up fee revenues collected to pay for an eight inch diameter Bella Vista water main which was extended out far beyond the existing service area into the area being requested in this application. In addition, \$415,000 was spent for a Heritage – Felix Road water line and \$36,085 for a Ricke Well No. 3, 8 inch diameter line. At this time, Staff does not consider this an appropriate use of the Hook-up Fee funds which are primarily to be used for backbone plant such as wells, storage tanks and pressure tanks needed for new developments. It seems that none of the funds were used for well production. In addition, the data response to Staff question JAC 3-8 indicates a cost for the Bella Vista line of \$348,044.28, not \$1,180,410.

#### Rate Case Filing

There are several discrepancies and/or issues that require further investigation that have risen during the processing of this case. These are:

- 1. The Company may have spent Offsite Facility Hook-up Fee funds on mains that may not qualify as backbone plant (e.g., Bella Vista Line).
- 2. The Company seems to have provided several different costs for the Bella Vista Line. The costs are significantly different which raises the question of why it is so difficult for the Company to provide this information and places doubt about the accuracy of the information provided.
- 3. The Company had great difficulty in providing commonly requested water production and water use data. This raises the question about how well the system is being operated and whether the Company really understands where it stands with its water supply.
- 4. It appears that several portions of the ADWR well information supplied to Staff show incorrect well registration numbers.

- 5. At least one of the wells listed as a Company well is registered as being owned by Johnson International and not Johnson Utilities in the ADWR data base.
- 6. The Company provided data to Staff that well JR No. 7 was used to provide water on the system to cover peak seasonal flows. The Company subsequently modified its position and told Staff that the well was only used for construction water.
- 7. The large amounts of Central Arizona Project ("CAP") water and construction water sold each year are difficult to track in the Company records.
- 8. The rates currently charged by the Company are its initial rates established in 1997. From 1999 to 2004, the Company grew from less than 175 water customers to over 8,500. The initial rates may no longer be appropriate for a company with such large growth.

In light of the above, Staff recommends that the Company be ordered to submit a full rate case filing by April 30, 2006, for both the water and wastewater divisions using a 2005 test year. As an alternative, it is recommended that the Commission order Staff to perform an audit of the Johnson Utilities' Hook-up Fee Account within three months of a Decision in this matter and come back to the Commission with any appropriate recommendations.

#### La Osa Ranch Litigation

Johnson Utilities majority shareholder is Mr. George Johnson. In addition to ownership of a public service company, Mr. Johnson also has ownership in real estate, live stock and agriculture.

On February 14, 2005, the Arizona Attorney General's office filed a civil lawsuit against various financial affiliates of Johnson Utilities alleging trespass, breach of grazing lease, destruction of native plants on state and private land, water quality discharge violations and unlawful killing of bighorn sheep.

The litigation is primarily focused on Mr. Johnson's actions as a property owner of La Osa Ranch, a 10,000 acre property in southern Pinal County, adjacent to state trust lands and the Ironwood National Forest Monument.

According to the complaint, Mr. Johnson failed to obtain permits to clear private property, trespassed and cleared state lands of natural vegetation and destroyed archaeological sites located in the Los Robles Wash floodplain.

The State also alleges that Mr. Johnson failed to abide by the terms of the U.S. Bureau of Land Management grazing lease by allowing domestic goats in close contact with Desert Big Horn Sheep, infecting the sheep, causing 21 to die from malnutrition, falls or failure to evade predators.

The Arizona Attorney General's office filed the civil lawsuit in Maricopa County Superior Court in conjunction with the Department of Environmental Quality, the Department of Agriculture, the Land Department, the Board of Regents, and the Game and Fish Commission. The lawsuit named Mr. Johnson, his spouse, the George H. Johnson Revocable Trust, Johnson International, Inc., the Ranch at South Fork, L.L.C., General Hunt Properties, Inc., Atlas Southwest, Inc. and other individuals.

Johnson Utilities was not named in the civil lawsuit. None of the allegations include actions taken as a public service company. However, a civil lawsuit against Johnson Utilities financial affiliates by the Attorney General and five state agencies requires the Commission be provided the information necessary to protect Johnson Utilities customers from any potential adverse ruling against it financial affiliates.

Therefore Staff recommends that Johnson Utilities be required to file Affiliate Interest reports as required under Arizona Administrative Code R14-2-801 et al. In addition to the above, Staff also recommends that Johnson Utilities be required to file quarterly reports on the status and events in the La Osa Ranch litigation in CV2005-002692.

#### **Proposed Rates**

Johnson Utilities is proposing to provide utility services to the extension area at its tariffed rates and charges.

#### **Pinal County Franchise**

Every applicant for a CC&N and/or CC&N extension is required to submit to the Commission evidence showing that the applicant has received the required consent, franchise or permit from the proper authority. If the applicant operates in an unincorporated area, the company has to obtain the franchise from the County. If the applicant operates in an incorporated area of the County, the applicant has to obtain the franchise from the City/Town.

Johnson Utilities has a Pinal County franchise agreement which includes the proposed extension area.

#### Recommendations

If the Commission chooses to grant Johnson Utilities' application for an extension of its CC&N to provide wastewater and water services to Quail Run, Staff recommends the following:

1. That the Commission issue, pursuant to A.R.S. §40-282(D), an "Order Preliminary" to the issuance of the ultimate CC&N extension to Johnson Utilities.

- 2. That Johnson Utilities be required not to construct any water distribution mains or wastewater collection mains within the CC&N extension area defined by this docket, nor to provide any water or wastewater services within the CC&N extension area defined by this docket until and after the issuance of a subsequent "Final Order" of the Commission issuing the CC&N in this Docket.
- 3. That Johnson Utilities be required to demonstrate to the satisfaction of the Director of Utilities that the Company can meet the water production needs in PWS No. 11-128 for its current customer base at the time of the demonstration. Johnson Utilities shall also demonstrate to the satisfaction of the Director of Utilities that it can continue to develop water production resources to meet the system needs within a reasonable foreseeable future. Both of the above can be demonstrated by submitting a list of pending or future wells, their anticipated production capacity in gallons per minute, and a time schedule for ADEQ approval of construction and operation.
- 4. That Johnson Utilities be required to update or amend its Designation of Assured Water Supply to include the service area in this CC&N extension application. Johnson Utilities shall file with Docket Control under this same docket number the amended Designation of Assured Water Supply, stating that there is adequate water supply, where applicable or when required by statute.
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- 6. That Johnson Utilities be required to docket an arsenic plan with Docket Control if the water quality from any of its wells has an arsenic level of 10 parts per billion or more.
- 7. That Johnson Utilities file with Docket Control, for Staff review and/or approval, a copy of the fully executed main extension agreements for wastewater and water facilities for Quail Run.
- 8. That Johnson Utilities file with Docket Control the Unified (Aquifer Protection) Water Quality Permits issued by the ADEQ for the Copper Basin Regional Wastewater Treatment Facility.
- 9. That Johnson Utilities be required to file with Docket Control copies of the ADEQ "Approvals to Construct" for the requested extension area for Quail Run.
- 10. That Johnson Utilities be required to comply with items 3, 4, 5, 6, 7, 8, and 9 above within 2 years of the effective date of the Order Preliminary. If Johnson Utilities complies with these items within the 2 year time-frame, it shall be required to file a motion within 2 years of the effective of the Order Preliminary to have the Commission issue its final CC&N decision. If Johnson Utilities fails to meet the 2 year time-frame, it shall be required to submit a new CC&N application if it still desires to serve Quail Run.

Johnson Utilities Company, L.L.C. Docket No. WS- 02987A-05-0088 Page 13

- 11. That Johnson Utilities be required to submit a full rate case filing for both the water and wastewater divisions using a 2005 test year no later than April 30, 2006. As an alternative, it is recommended that the Commission order Staff to perform an audit of the Johnson Utilities Hook-up Fee Account within three months of a Decision in this matter and come back to the Commission with appropriate recommendations.
- 12. That Johnson Utilities Company be required to file a quarterly report with the Compliance Section on the status of the pending litigation in CV2005-002692.
- 13. That Johnson Utilities be required to file Affiliate Interest reports as required under Arizona Administrative Code R14-2-801 et al.

# MEMORANDUM

DATE:

May 12, 2005

TO:

Blessing Chukwu

FROM:

John A. Chelus

Utilities Engineer

RE:

Johnson Utilities Company

CC&N Extension - Water & Wastewater

Docket No. WS-02987A-05-0088

### Introduction

Johnson Utilities Company ("Johnson or Company") has applied to extend its Certificate of Convenience and Necessity (CC&N) for water and wastewater service in Pinal County. The requested service area includes a portion of section 24 of Township 3 South, Range 8 East. The area is located at the southeast corner of Bella Vista Road and Quail Run Road. This will add approximately 0.16 square miles or 100 acres to its existing certificated area for water and wastewater service. The area will cover a development known as Quail Run and will contain approximately 351 lots. The Company anticipates full build out within five years.

# Wastewater

Quail Run will have an eight inch gravity sewer throughout the development which will be pumped by lift station and force main to the existing Sonoran Villages development lift station located at the northwest corner of Felix and Judd Road. This area is included within the Copper Basin regional wastewater service area and is consistent with the "CAAG §208 Water Quality Plan Amendment No. 4" for Johnson Utilities ("CAAG" is an acronym for the Central Arizona Association of Governments). The Copper Basin regional facility is a master planned wastewater treatment project which is matched to projected development and population densities. Treatment processes, phasing and capacities are delineated in the CAAG Plan No 4. The CAAG Plan essentially provides for the construction of a 0.5 Million Gallons per Day (MGD) treatment plant which will be expandable to 2.5 MGD. Effluent will be reused with any excess being disposed of through an Arizona surface water discharge permit, although it is anticipated that the irrigation needs of green belts and golf courses will be sufficient for the generated effluent. The wastewater treatment plant will be constructed approximately 2 miles east of the Quail Run development on Judd Road.

Staff concludes that the proposed wastewater system has or can reasonably be expected to develop the necessary sewage treatment capacity to serve the proposed CC&N extension area for Quail Run and is consistent with the approved "CAAG §208 Water Quality Plan" for Johnson Utilities.

### Water

The development will be served by the Johnson Utilities public water system number 11-128. The design report assumed that the Johnson water system has adequate storage and pumping capacity to meet the needs of this development. Johnson has in existence seven well(s) with a total production capacity of 2,870 gal/min, 1,650,000 gallons of storage capacity, booster pumps, pressure tanks, and a distribution system serving approximately 8,500 connections. Based on historical growth rates, it is anticipated that the existing service area could have 22,000 total customers at the end of five years. The Company has predicted an additional 351 customers for the proposed CC&N extension, at the end of five years. The existing production and storage can adequately serve approximately 8,235 connections under peak conditions. This means that Johnson does not currently have enough capacity to adequately serve its existing customers under all conditions.

Staff requested well data, storage data and water usage data from Johnson for its existing system in a data request dated January 13, 2005. The first response from Johnson on January 21<sup>st</sup>, 2005, listed seven wells that Johnson indicated were supplying the Johnson Ranch system (Table 1). These correspond to the wells which the Arizona Department of Water Quality ("ADEQ") considers as approved for use. Based on this data, Staff determined that Johnson had insufficient well capacity to serve the Johnson Ranch system.

Original List of Active Johnson Utility Wells Connected to PWS ID No. 11-128
Table 1

Well Number	Well name	ADEQ Approval to Construct	ADEQ Approval of Construction	Pumping G.P.M.
55-599386	Circle Cross	Nov. 22, 2002	Oct. 22, 2004	890
55-558445	J.R. No. 4	Apr. 21, 1998	May 18, 1999	500
55-559843	J.R. No. 5	Apr. 21, 1998	Jan. 24, 2002	500
55-621462	Skyline	Dec. 4, 2002	Aug. 20, 2003	650
55-582085	Oasis No. 1	Aug. 07, 2002	Dec. 13, 2002	110
55-582087	Oasis No. 2	Aug. 07, 2002	Dec 13, 2002	110
55-582088	Oasis No. 3	Aug. 07, 2002	Dec. 13, 2002	110
Total				2,870 gpm

When Johnson was made aware of Staff's concerns, Johnson submitted a letter to Staff dated January 28, 2005. It included a "revised" Water Use Data Sheet for Johnson Utilities Company, System Number 11-128. The letter stated that "The revised "Water Use Data Sheet" now includes all the wells that are connected to the system." The revised well list added JR Well No. 3, JR Well No. 7, and Edwards Well No. 2 as active. (Table 2) The Company indicated that the additional wells were not reported originally because they were on standby due to decreased winter demand.

Revised List of Active, Pending and Abandoned Johnson Utility Wells
Connected to PWS ID No. 11-128 – Table 2

Well	Vell         Well Name         ADEQ Approval         ADEQ         Status				Status
Number	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	to Construct	Approval of Construction	GPM	204040
55-599386	Circle Cross	Nov. 22, 2002	Oct. 22, 2004	890	Active
55-558445	J.R. No. 4	Apr. 21, 1998	May 18, 1999	500	Active
55-559843	J.R. No. 5	Apr. 21, 1998	Jan. 24, 2002	500	Active
55-621462	Skyline	Dec. 4, 2002	Aug. 20, 2003	650	Active
55-582085	Oasis No. 1	Aug. 07, 2002	Dec. 13, 2002	110	Active
55-582087	Oasis No. 2	Aug. 07, 2002	Dec 13, 2002	110	Active
55-582088	Oasis No. 3	Aug. 07, 2002	Dec. 13, 2002	110	Active
55-625916	Circle Cross	n/a			Abandon
55-625918	Circle Cross	n/a			Abandon
55-586189	Edwards Rd. #2	Sep. 20, 2001	Jul 23, 2002	35	Active
55-627105	J.R. No. 3			500	Active
55-562385	J.R. No. 7			900	Active
55-615284	J.R. No. 2			360	Not Conn.
55-201429	Morning Star			800	Pending
55-626147	San Tan No. 1			500	Pending
	San Tan No. 2			800	Pending
55-598836	San Tan No. 2		1	000	1 Chung

During an inspection of the Johnson Ranch system on February 2, 2005, Staff was shown all of the wells listed as active by Johnson in the revised January 28, 2005 Water Use Data Sheet. Staff was told during the inspection that the Edwards Well No. 2 was in fact disconnected.

As part of the evaluation of this application, Staff held a meeting with ADEQ about a pending ADEQ inspection report. It was determined from these conversations that the wells inspected on January 14, 2005 by ADEQ corresponded exactly with the original seven wells in Table I. In addition, ADEQ personnel could not locate an "Approval of Construction" (which is essentially an authorization to operate the well) for Johnson Ranch Wells No. 3 and No. 7, and could not locate an "Approval to Construct" for Johnson Ranch Well No. 7. It was then concluded that none of the additional wells listed by Johnson as active in its revised responses were approved by ADEQ for use on system PWS 11-128.

On February 23, 2005, Johnson filed a response to Staff's Second Data Request. This included a table of current wells in service along with the arsenic concentrations. (Table 3) This table included the Johnson Ranch Well No. 7, Johnson Ranch Well No. 3 and Edwards Road Well No. 2, all of which were listed as entering Point of Entry (POE) Number one.

Johnson Utilities Well Inventory for System 11-128 as of February 2005
Table 3

1 able 3					
Well Number	Well Name	Arsenic Levels Mg/l	POE	Status	
55-625916	Circle Cross			Abandon	
55-625918	Circle Cross			Abandon	
55-599386	Circle Cross	0.002	4	Active	
55-621462	Skyline	0.003	3	Active	
55-586189	Edwards Rd. #2	0.002	1	Active	
55-627105	J.R. No. 3	n/a	1	Active	
55-558445	J.R. No. 4	0.003	1	Active	
55-559843	J.R. No. 5	0.005	1	Active	
55-562385	J.R. No. 7	n/a	1	Active	
55-615284	J.R. No. 2	n/a	n/a	Not Conn.	
55-201429	Morning Star Farms			Pending	
55-582085	Oasis No. 1	n/a	2	Active	
55-582087	Oasis No. 2	0.003	2	Active	
55-582088	Oasis No. 3	0.022	2	Active	
55-626147	SanTan No. 1	0.007	1	Pending	
55-598836	San Tan No. 2			Pending	

On March 29, 2005, Johnson submitted responses to Staff's fourth set of data requests. In the responses, Johnson listed the Johnson Ranch Well No. 7 as a construction water well, the San Tan Heights Well as a construction water well, the Johnson Ranch Well No. 3 as a Precision Golf Course Well and the Edwards Road No. 2 Well as on-line with a flow of 130 gallons per minute. An Approval to Construct for the San Tan Heights Well No. 2 dated March 24, 2005 was also submitted which indicated a maximum pumping capacity of 710 gpm. There is yet no authorization to operate the San Tan well due to high nitrates. In spite of the submittal, Staff did not see any changes to the well production or water usage that changed its position that the Company does not have an adequate water supply.

Staff had a meeting with Johnson Utilities on April 5, 2005. The meeting was held so that the Company could explain the discrepancies in its data. At the meeting, the Company submitted flow rates for the same wells that were higher than previously submitted which would have the effect of increasing the gallons of water available for customers. In spite of the meeting and another new submittal dated April 5, 2005, Staff did not see any changes to the well production

or water usage that changed its conclusion that the Company lacks an adequate water supply.

It was also pointed out to the Company at a meeting on April 5, 2005, that many of the ADWR well numbers used by the Company in its well listings were incorrect and it was difficult for Staff to determine exactly what the Company had submitted. It was also noted that ownership of at least one of the wells (Johnson Ranch No. 7) was listed in ADWR records as belonging to Johnson International, not Johnson Utilities. This is significant because Johnson International is in litigation with the State Attorney General's Office.

### **Analysis**

Based on water use data supplied by the Company, Staff calculated that the average daily demand during the peak month was 417 gal/day-service, and estimated that the water demand on the annual peak day would be about 521 gallons/day-service. The Company reported 8,508 actual customers ending December 2004, and recent data shows a growth rate of about 6% per month. Using these numbers, the water production necessary to meet the annual peak day, is shown in Table 4. This is the absolute minimum needed and assumes that all wells run 24 hours per day and that no wells are out of service for pump replacement or repairs.

Since the approved wells only produce 2,870 gal/min, it can be seen that presently Johnson Utilities PWS No. 11-128 has insufficient capacity to meet its peak demand, which occurs during the summer.

# Johnson Utilities, PWS No. 11-128 Water Demand on Annual Peak day Table 4

Month	Customer Base	Peak Day Demand	Average daily Demand	
	(Estimated Beyond	(gal/min)	During Peak Month	
	December)		(gal/min)	
Dec 2004	8,508	3,078	2,462	
Jan 2005	9,018	3,262	2,610	
Feb 2005	9,560	3,459	2,767	
Mar 2005	10,133	3,666	2,933	
Apr 2005	10,741	3,886	3,109	
May 2005	11,386	4,119	3,295	
Jun 2005	12,069	4,367	3,494	

For the issuance of Certificates of Convenience and Necessity, Staff seeks to answer the question:

"Can the utility now meet the service demands of its existing customer base and the demand of the proposed customer additions, or as an alternative, can it now meet the service demands of its existing customer base and can it be reasonably expected that the utility can develop the future required resources and has the performance history to warrant belief that it will develop the future required resources?"

As a result of Staff analysis, it would appear that Johnson Utilities has not developed water production resources to meet the pace of growth, which casts doubt on the ability of the utility to meet its needs for new service areas.

# **Cost Analysis**

Johnson submitted no cost analysis. The developments will be funded through main extension agreements and offsite facility hookup fees.

# **ACC Compliance**

A check with the Utilities Division Compliance Section showed no outstanding compliance issues.

# Arizona Department of Environmental Quality (ADEQ) Compliance

ADEQ regulates the water system under ADEQ Public Water System I.D. No. 11-128. ADEQ has determined that this system is currently delivering water that meets water quality standards required by Arizona Administrative Code, Title 18, Chapter 4.

The wastewater treatment plant to serve Quail Run has not yet been constructed. Since this is a proposed utility which have yet to become operational, there is no historical compliance data for the wastewater segment.

# Arizona Department of Water Resources (ADWR) Compliance

Johnson is within the Phoenix Active Management Area. As such, each developer will be required to demonstrate a "Designation of Assured water Supply" from ADWR for the entire development. Presently Johnson Utilities holds a "Designation of Assured Water Supply "for its existing service area. It is assumed that Johnson will continue to elect this alternative. Therefore, it is recommended that Johnson Utilities shall update or amend its "Designation of Assured Water Supply" to include the service areas in this CC&N application. Johnson Utilities shall file such an amended ADWR certificate with the Commission's Docket Control under this same docket number.

### Arsenic

Staff requested the arsenic concentration for each well but has not been provided a complete list at the time of the writing of this report. The Company did provide arsenic concentrations for most of the wells and stated that levels would be provided for the remainder of the wells as soon as they are available. All wells except one so far , showed compliance with the new arsenic standard of 10  $\mu$ g/l. Well No. 55-582085, Oasis Well No. 1 has an arsenic concentration of 22  $\mu$ g/l. The Company plans to abandon this well.

Staff recommends that Johnson be required to file well data with Docket Control showing arsenic concentrations for all existing and pending wells. Staff further recommends that Johnson be required to file an arsenic plan with Docket Control if the water quality of its wells has an arsenic level of 10 parts per billion or more.

### **Curtailment Tariff**

The Company does not have a curtailment tariff on file. This issue is being addressed under Docket No. WS-02987A-04-0288.

# Offsite Facilities Hookup Fee Tariff

A review of the 2004 Johnson status report on the Commission approved Hookup Fees indicates that the Company collected \$6,597,450 in water Hookup Fees and \$7,107,500 in wastewater hookup fees. The Company spent \$1,180,410 of the water hookup fee revenues collected to pay for an eight inch diameter Bella Vista water main which was extended out far beyond the existing service area into the area being requested in this application. In addition, \$415,000 was spent for a Heritage—Felix Road water line and \$36,085 for a Ricke Well No. 3, 8 inch diameter line. At this time, Staff does not consider this an appropriate use of the Hookup Fee funds which are primarily to be used for backbone plant such as wells, storage tanks and pressure tanks needed for new developments. It seems that none of the funds were used for well production. In addition, the data response to Staff question JAC 3-8 indicates a cost for the Bella Vista line of \$348,044.28, not \$1,180,410.

# Recommendation to Order a Rate Case filing.

There are several discrepancies and/or issues that require further investigation that have risen during the processing of this case. These are:

- 1. The Company may have spent Offsite Facility Hook-up Fee funds on mains that may not qualify as backbone plant (e.g., Bella Vista Line)
- 2. The Company seems to have provided several different costs for the Bella Vista Line. The costs are significantly different which raises the question

- of why it is so difficult for the Company to provide this information and places doubt about the accuracy of the information provided.
- 3. The Company had great difficulty in providing commonly requested water production and water use data. This raises the question about how well the system is being operated and whether the Company really understands where it stands with its water supply.
- 4. It appears that several portions of the ADWR well information supplied to Staff show incorrect well registration numbers.
- 5. At least one of the wells listed as a Company well is registered as being owned by Johnson International and not Johnson Utilities in the ADWR data base?
- 6. The Company provided data to Staff that well JR No. 7 was used to provide water on the system to cover peak seasonal flows. The Company subsequently modified its position and told Staff that the well was only used for construction water?
- 7. The large amounts of CAP water and construction water sold each year are difficult to track in the Company records.
- 8. The rates currently charged by the Company are its initial rates established in 1997. From 1999 to 2004 the Company grew from less than 175 water customers to over 8,500. The initial rates may no longer be appropriate for a company with such large growth.

In light of the above, Staff recommends that the Company be ordered to submit a full rate case filing by April 30, 2006 for both the water and wastewater divisions using a 2005 test year. As an alternative, it is recommended that the Commission order Staff to perform an audit of the Johnson Utilities Hookup Fee Account within three months of a Decision in this matter and come back to the Commission with any appropriate recommendations.

### Summary

### Comments

- 1. Staff concludes that the existing Johnson water system does not have adequate production and storage capacity to serve the existing and proposed CC&N area.
- 2. ADEQ has determined that the water system is currently delivering water that meets water quality standards required by Arizona Administrative Code, Title 18, Chapter 4.

The wastewater treatment plant to serve Quail Run has not yet been constructed. Since this is a proposed utility which has yet to become operational, there is no historical compliance data for the wastewater segment.

3. A check with the Utilities Division Compliance Section showed no outstanding compliance issues.

### Recommendations

- 1. If the Commission chooses to grant this area to Johnson, Staff recommends that the Commission issue, pursuant to A.R.S. §40-282(D), an "Order Preliminary" to the issuance of the ultimate CC&N to Johnson Utilities.
- 2. Staff further recommends that Johnson Utilities shall not construct any water distribution mains or wastewater collection mains within the CC&N extension area defined by this docket, nor shall Johnson Utilities provide any water or wastewater services within the CC&N extension area defined by this docket until and after the issuance of a subsequent "Final Order" of the Commission in this Docket.
- 3. Staff further recommends that Johnson Utilities be required to demonstrate to the satisfaction of the Director of Utilities that the Company can meet the water production needs in PWS No. 11-128 for its current customer base at the time of the demonstration. Johnson Utilities shall also demonstrate to the satisfaction of the Director of Utilities that it can continue to develop water production resources to meet the system needs within a reasonable foreseeable future. Both of the above can be demonstrated by submitting a list of pending or future wells, their anticipated production capacity in gal/min, and a time schedule for ADEQ approval of construction and operation.
- 4. Staff further recommends that Johnson Utilities shall update or amend its "Designation of Assured Water Supply" to include the service areas in this CC&N application. Johnson Utilities shall file such an amended ADWR certificate with the Commission's Docket Control under this same docket number.
- 5. Staff recommends that Johnson be required to file well data with Docket Control showing arsenic concentrations for all existing and pending wells. Staff further recommends that Johnson be required to file an arsenic plan with Docket Control if the water quality of its wells has an arsenic level of 10 parts per billion or more.
- 6. It is recommended Johnson Utilities file with Docket Control the Unified (Aquifer Protection) Water Quality Permits issued by the Arizona Department of Environmental Quality for the Copper Basin Regional Wastewater Treatment Facility.
- 7. It is recommended that Johnson Utilities shall submit copies of the ADEQ "Approvals to Construct" for the requested extension area for Quail Run.

Johnson Utilities CC&N WS-02987A-05-0088 Page 10

8. Staff further recommends that the Company be ordered to submit a full rate case filing for both the water and wastewater divisions using a 2005 test year no later than April 30, 2006. As an alternative, it is recommended that the Commission order Staff to perform an audit of the Johnson Utilities Hookup Fee Account within three months of a Decision in this matter and come back to the Commission with appropriate recommendations.

# MEMORANDUM

TO:

Jım Fisher

Executive Consultant II

Utilities Division

FROM:

Barb Wells

Information Technology Specialist

Utilities Division

THRU:

Del Smith

Engineering Supervisor

Utilities Division

DATE:

February 16, 2005

RE:

JOHNSON UTILITIES COMPANY (DOCKET NO. WS-02987A-05-0088)

The area requested by Johnson for an extension for water service has been plotted with no complications using the legal description provided with the application (a copy of which is attached).

Also attached is a copy of the map for your files.

:bsw

Attachments

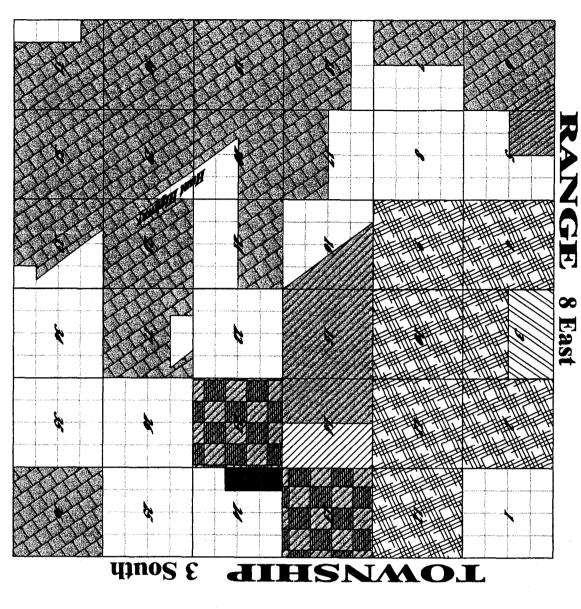
cc: Docket Control

Mr. Jay Shapiro

Ms. Deb Person (Hand Carried)

File

# COUNTY Pinal



Diversified Water Utilities, Inc. W-2859 (3)

W-2234 (2)

H<sub>2</sub>0, Inc.

WS-2987 (6)

Johnson Utilities Company

W-2425 (2)

Sun Valley Farms Unit VI Water Company

Diversified Water Utilities, Inc.

Application for Extension Docket No. W-2859-04-844

Competing Application with Johnson for Sections 13 & 23

Johnson Utilities Company (Water)

Application for Extension Docket No. WS-2987-04-869

Competing Application with Diversified for Sections 13 & 23



Johnson Utilities Company (Water) Application for Extension **Docket No. WS-2987-05-088** 

### EXHIBIT "A"

A PARCEL OF LAND BEING SITUATE IN THE WEST HALF OF THE WEST HALF OF SECTION 24, TOWNSHIP 3 SOUTH, RANGE 8 EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, PINAL COUNTY, ARIZONA, HAVING A BOUNDARY MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING FOR A TIE AT THE ARIZONA HIGHWAY DEPARTMENT BRASS CAP MARKING THE NORTHWEST CORNER OF SAID SECTION 24, FROM WHICH THE ARIZONA HIGHWAY DEPARTMENT BRASS CAP MARKING THE WEST QUARTER SECTION CORNER OF SAID SECTION 24 BEARS SOUTH 0 DEGREES 18 MINUTES 56 SECONDS EAST, 2652.01 FEET DISTANT;

THENCE NORTH 89 DEGREES 58 MINUTES 50 SECONDS EAST, 1351.43 FEET TO THE WEST 1/16 CORNER OF SAID SECTION 24;

THENCE SOUTH 0 DEGREES 16 MINUTES 45 SECONDS EAST, 40.00 FEET TO THE TRUE POINT OF BEGINNING;

THENCE CONTINUING SOUTH 0 DEGREES 16 MINUTES 45 SECONDS EAST, 2611.66 FEET TO A POINT ON THE EAST-WEST MID-SECTION LINE OF SECTION 24;

THENCE SOUTH 0 DEGREES 26 MINUTES 44 SECONDS EAST, 713.09 FEET TO THE SOUTHEAST CORNER OF SUBJECT PARCEL:

THENCE SOUTH 89 DEGREES 57 MINUTES 58 SECONDS WEST, 1307.23 FEET TO THE SOUTHWEST CORNER OF SUBJECT PARCEL, SAID POINT BEING ON THE EASTERLY RIGHT-OF-WAY LINE OF QUAIL RUN ROAD;

THENCE NORTH 0 DEGREES 38 MINUTES 54 SECONDS WEST, 713.11 FEET TO A POINT ON THE EAST-WEST MID-SECTION LINE, SECTION 24 AND FROM WHICH POINT THE WEST QUARTER SECTION CORNER OF SECTION 24 BEARS SOUTH 89 DEGREES 57 MINUTES 58 SECONDS WEST, 40.00 FEET;

THENCE NORTH 0 DEGREES 18 MINUTES 56 SECONDS WEST, ALONG THE EASTERLY RIGHT-OF-WAY LINE OF QUAIL RUN ROAD 2612.00 FEET;

THENCE NORTH 89 DEGREES 58 MINUTES 50 SECONDS EAST, 1311.40 FEET TO THE TRUE POINT OF BEGINNING.

RECEIVED

2005 JUL 27 P 12: 29

AZ CORP COMMISSION DOCUMENT CONTROL

**MEMORANDUM** 

To:

**Docket Control** 

From: Ernest G. Johnson, Director

**Utilities Division** 

Date:

July 26, 2005

RE:

AMENDMENT TO STAFF REPORT

JOHNSON UTILITIES COMPANY APPLICATION FOR AN EXTENSION OF ITS CERTIFICATE OF CONVENIENCE AND NECESSITY TO PROVIDE WATER AND WASTEWATER SERVICE IN PINAL COUNTY DOCKET NO. WS-02987-05-0088

# Background

- In the Staff report dated June 6, 2005, Staff reported in part that," Based on the information provided in this docket and from Staff's review of other available material regarding the Company, Staff concludes that the existing Johnson Utilities water system does not have adequate production and storage capacity to serve the existing and proposed CC&N area".
- 2. On June 30, 2005, Johnson Utilities Company ("Company" or "Applicant") met with Staff to discuss the well capacity issue.
- 3. On July 1, 2005, the Applicant, under Docket No. WS-02987A-04-0288, provided additional information about new wells which have recently been placed in service and adjustments to flows to existing wells which were brought about by pump replacements and blending. In particular, the San Tan Heights Well No. 2 received an Approval of Construction from the Arizona Department of Environmental Quality ("ADEQ") on April 18, 2005, for 700 gallons per minute and the Morning Sun Farm Well No. 1 received an Approval of Construction on June 3, 2005, for 1,100 gallons per minute. The Company now reports that the total estimated well production that is currently online for Public Water System 11-128 is 5,082 gallons per minute. The Company also reported having 10,833 customers at the end of May, 2005.

Based on the demand requirements used in the June 6, 2005 Staff Report, the updated customer count provided by the Company on July 1, 2005 and assuming an average growth rate of 500 customers per month, Staff estimates there will be enough RECEIVED well capacity to provide for an annual peak day demand of 521 gallons per/day service

JUL 2 7 2005

Johnson Utilities CC&N Docket No. WS-02987A-05-0088 Page 2

through December 2005 and an average daily demand during the peak month of 417 gallons/day service through June 2006.

In addition, the Company has previously submitted copies of applications for the Crestfield Wells No. 1 and 2 which were submitted to ADEQ on May 26, 2005. Each well is expected to produce 1,000 gallons per minute. Therefore, Staff concludes that the existing system has adequate production and storage capacity.

Service List for: Johnson Utilities Company Docket No. WS-02987A-05-0088

Mr. Brian P. Tompsett, P.E. Johnson Utilities Company 5230 East Shea Boulevard Scottsdale, AZ 85254

Mr. Richard Sallquist, Esq. Sallquist & Drummond, P.C. 4500 S. Lake Shore Dr., Suite 339 Tempe, Arizona 85282

Mr. Ernest G. Johnson
Director, Utilities Division
Arizona Corporation Commission
1200 W. Washington
Phoenix, AZ 85007

Judge Dwight Nodes Hearing Division Arizona Corporation Commission 1200 West Washington St. Phoenix, Arizona 85007

David Ronald Legal Division Arizona Corporation Commission 1200 W. Washington St. Phoenix, Arizona 85007 Johnson Utilities Company, L.L.C. Docket No. WS- 02987A-05-0088 Page 1



### Revised Staff's Recommendations for Docket #WS-02-2987A-05-0088

If the Commission chooses to grant Johnson Utilities' application for an extension of its CC&N to provide wastewater and water services to Quail Run, Staff recommends that the Commission issue a CC&N extension to Johnson Utilities with the following conditions:

- 1. That Johnson Utilities be required to update or amend its Designation of Assured Water Supply to include the service area in this CC&N extension application. Johnson Utilities shall file with Docket Control under this same docket number the amended Designation of Assured Water Supply, stating that there is adequate water supply, where applicable or when required by statute within 365 days of the decision in this case.
- 2. That Johnson Utilities file with Docket Control, for Staff review and/or approval, a copy of the fully executed main extension agreements for water facilities for Quail Run within 365 days of a decision in this case.
- 3. That Johnson Utilities file with Docket Control the Unified (Aquifer Protection) Water Quality Permits issued by the ADEQ for the Copper Basin Regional Wastewater Treatment Facility within 365 days of a decision in this case.
- 4. That Johnson Utilities be required to charge its authorized rates and charges for water and wastewater in the extension area.
- 5. That Johnson Utilities be required to submit a full rate case filing for both the water and wastewater divisions using a 2005 test year no later than April 30, 2006. As an alternative, it is recommended that the Commission order Staff to perform an audit of the Johnson Utilities Hook-up Fee Account within three months of a Decision in this matter and come back to the Commission with appropriate recommendations.
- 6. That Johnson Utilities Company be required to file a quarterly report with the Compliance Section on the status of the pending litigation in CV2005-002692.
- 7. That Johnson Utilities be required to file Affiliate Interest reports as required under Arizona Administrative Code R14-2-801 et al.

Staff further recommends that the Commission's Decision granting the requested CC&N extension to Johnson Utilities be considered null and void without further order from the Commission should Johnson Utilities fail to meet Conditions Nos. 1, 2, and 3 listed above within the time specified.